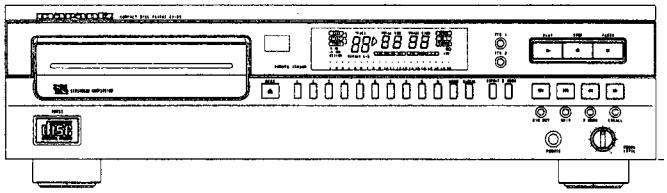
Service Manual

74CD32 / 01B/02B/05B/07B
74CD42 / 01B/02B/05B/07B
74CD52 / 01B/02B/05B/07B
Compact disc player



CONTENTS

SECTION ..... PAGE

1 TECHNICAL SPECIFICATIONS ---------- 1

2 CONTROLS AND CONNECTIONS ---------- 2

3 FAULT FINDING GUIDE ---------- 3

4 SERVICING HINTS ---------- 7

5 EXPLODED VIEW (MECHANICAL PARTS LIST) ---------- 10

6 BLOCK DIAGRAM ---------- 13

7 CIRCUIT DIAGRAM AND PARTS LOCATION ---------- 15

8 ELECTRICAL PARTS LIST ---------- 34

marantz®

model CD-32/CD-42/CD-52

First issue : 1991

4822 725 50948

MZ 2959

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound. Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available at our National Marantz Subsidiary or Agent.

MARANTZ EUROPE B.V.
P.O. Box 80002
Building SFF 2
5600 JB Eindhoven
The Netherlands
Phone : +31-40-732241
Fax : +31-40-735578

ORDERING PARTS

Parts can be ordered either by mail or by telex. In both cases, the correct part number has to be specified. The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which the part is required
5. Way of shipment
6. Signature: any order form or telex must be signed, otherwise such part order will be considered as null and void.

ADDRESSES

AUSTRIA
MARANTZ
Hietzinger Kai 137a
1130 Wien
Austria

BELGIUM
MARANTZ EUROPE B.V.
Div. Benelux
P.O.Box 80002
Building SFF 2
5600 JB Eindhoven
The Netherlands

CHILE
MARANTZ DIVISION OF
PHILIPS S.A.
Av.Santa Maria 0760
Casilla 2687
Santiago
Chile

DENMARK
MARANTZ
Horsvinget 5
2630 Tastrup
Denmark

FINLAND
MARANTZ
Kuortanegatan 1
00520
Helsingfors 52
Finland

FRANCE
MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France

GERMANY
MARANTZ GERMANY GmbH
Alexanderstrasse 1
2000 Hamburg
Germany

GREAT BRITAIN
MARANTZ HiFi UK Ltd.
Kingsbridge House
Padbury Oaks
575-583 Bath Road
Longford Middlesex UB7 OEH,
U.K.

GREECE
ADAMCO ELECTR. SA
P.O.Box 21025
Hippocratus Str. 188
Athens 11471
Greece

ITALY
MARANTZ ITALIANA SPA
Piazza IV Novembre 3
20124 Milano
Italy

JAPAN
MARANTZ JAPAN INC.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

KUWAIT
AL ALAMIAH ELECTRONICS
P.O.Box 8196
Salmiah
22052 Kuwait

NETHERLANDS
MARANTZ EUROPE B.V.
Div. Benelux
P.O.Box 80002
Building SFF 2
5600 JB Eindhoven
The Netherlands

NORWAY
MARANTZ
Postboks 7034
Assiden
3007 Drammen
Norway

PORTUGAL
COREL
Av. da Liberdade
211-2 Esq.
1200 Lisboa
Portugal

SAUDI ARABIA
AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia

SOUTH AFRICA
MARANTZ S.A.
10 Bond Street
Randburg 2194
P.O. Box 7703
Johannesburg 2000
South Africa

SPAIN
MARANTZ SPAIN
Martinez Villergas 2
Apartado 2065
Madrid 28027
Spain

SWEDEN
MARANTZ
Box 1324
17125 Solna
Sweden

SWITZERLAND
MARANTZ SWITZERLAND
Postfach
8010 Zürich
Switzerland

TRADING
MARANTZ TRADING
P.O.Box 20008
Building SFF 2
5600 JB Eindhoven
The Netherlands

All of the above locations are fully equipped to take care of your total service needs or can advice you. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

TECHNICAL SPECIFICATIONS : CD-32, CD-42, CD-52

General

1.	Mains voltage	: [/01B] 110-120V, 220-240V [/02B] 230V [/05B, /07B] 240V
2.	Mains frequency	: 50Hz
3.	Mains voltage selection	: By soldering
4.	Power consumption mains, operated	: 15W

External RC-5 connection

	Specification	: V-in Low : from -2.0V to +1.6V V-in High : from +3V to +7.5V R-in : from 47 kOhm to 68 kOhm

Line output

1.	Number of channels	: 2
2.	Output voltage	: 2 Vrms +/- 2dB
3.	Unbalance left-right	: max. +/- 0.25dB
4.	Output resistance	: 200 Ohm
5.	Amplitude linearity	: max. +/- 0.2dB from 20 Hz to 20 kHz typ. +/- 0.03dB from 20 Hz to 20 kHz
6.	Phase non-linearity	: max. +/- 1.0° from 20 Hz to 20 kHz typ. +/- 0.5° from 20 Hz to 20 kHz
7.	Signal to noise ratio	: min. 100dB from 20 Hz to 20 kHz typ. 105 dB
8.	Dynamic range (-60dB)	: min. 90dB from 20 Hz to 20 kHz (max. 0.0040 %) typ. 96 dB (typ. 0.0025 %)
9.	Total harmonic distortion + noise	: min. 88dB from 20 Hz to 20 kHz (max. 0.0064 %) typ. 92 dB (typ. 0.0032 %)
10.	Intermodulation distortion	: min. 88dB from 20 Hz to 20 kHz (max. 0.0064 %) typ. 92 dB (typ. 0.0032 %)
11.	Outband attenuation	: min. 60dB above 24.8 kHz
12.	Channel separation	: min. 86dB from 20 Hz to 20 kHz typ. 90 dB
13.	Muting during random acces	: min. 90dB from 20 Hz to 20 kHz
14.	Automatic switched de-emphasis with time constant 15/50 µs	

Variable headphone

1.	Max. output voltage	: 7.4 Vrms
2.	Load impedance range	: 30-600 Ω
3.	Output impedance	: 150 Ω
4.	Max. output power	: 50 mW into 32 Ω 90 mW into 150 Ω 50 mW into 600 Ω
5.	Signal to noise ratio	: min. 90dB
6.	Dynamic range	: min. 90dB (20 Hz to 20 kHz)
7.	THD and noise	: min. 80dB (20 Hz to 20 kHz)
8.	Intermodulation distortion	: min. 80dB (20 Hz to 20 kHz)
9.	Channel separation	: min. 70dB (20 Hz to 20 kHz)

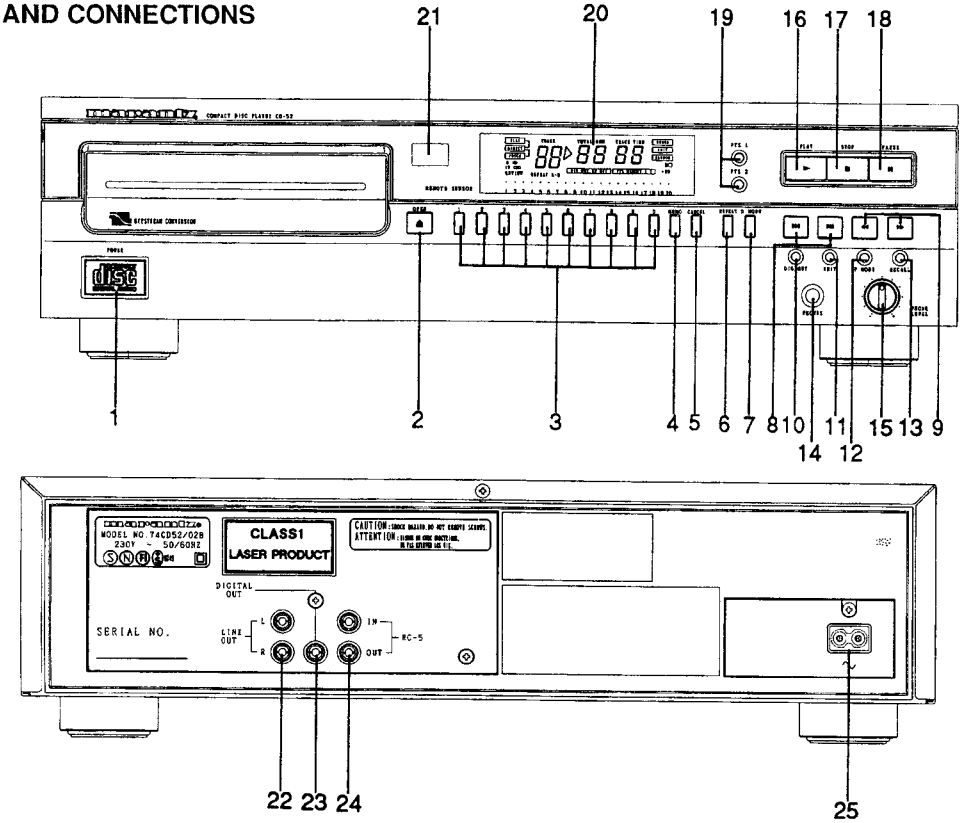
Dimensions and weight

1.	Apparatus tray closed	: 420 (W) x 100 (H) x 284 (D), W/O Legs.
2.	Apparatus tray open	: 420 (W) x 100 (H) x 429 (D)
3.	Weight without packing	: 4.4 Kg

Laser diode

1.	Wavelength	: 780nm +/- 5nm
2.	Output power on laserdiode	: typ. 3 mW
3.	Output power after objective lens	: 100 µW

CONTROLS AND CONNECTIONS



Front of player

1	POWER	1010
2	OPEN	1027
3	'1 ~ 0' digit keys	1020, 1051, 1021, 1028, 1034, 1030, 1050, 1029, 1031, 1033
4	MEMO	1032
5	CANCEL	1047
6	REPEAT	1035
7	D MODE	1052
8	⏮ and ⏭ (Previous and Next)	1044, 1045
9	◀◀ and ▶▶ (Search)	1036, 1040
10	DIG OUT	1048
11	EDIT	1049
12	P MODE	1025
13	RE CALL	1046
14	PHONES	1651
15	PHONE LEVEL	3691
16	PLAY	1038
17	STOP	1037
18	PAUSE	1039
19	FTS 1, 2	1026, 1023
20	Display	1061
21	REMOTE SENSOR	1060

Back of player

22	LINE OUT	1008
23	DIGITAL OUT	1008
24	RC-5	1008
25	Mains socket	1009

DIFFERENCE OF CD52/42/32

	ITEM & CONTENT	CD52	CD42	CD32		ITEM & CONTENT	CD52	CD42	CD32
1	1020 KEY 1	X	–	–	12	1034 KEY 5	X	–	–
2	1021 KEY 3	X	–	–	13	1035 REPEAT	X	–	–
3	1023 FTS 2	X	X	–	14	1046 RECALL	X	–	–
4	1025 P.MODE	X	–	–	15	1047 CANCEL	X	–	–
5	1026 FTS 1	X	X	–	16	1048 DIG.OUT	X	–	–
6	1028 KEY 4	X	–	–	17	1049 EDIT	X	–	–
7	1029 KEY 8	X	–	–	18	1050 KEY 7	X	–	–
8	1030 KEY 6	X	–	–	19	1051 KEY 2	X	–	–
9	1031 KEY 9	X	–	–	20	1052 D.MODE	X	–	–
10	1032 MEMO	X	–	–	21	1060 IR SENSOR	X	X	–
11	1033 KEY 0	X	–	–					

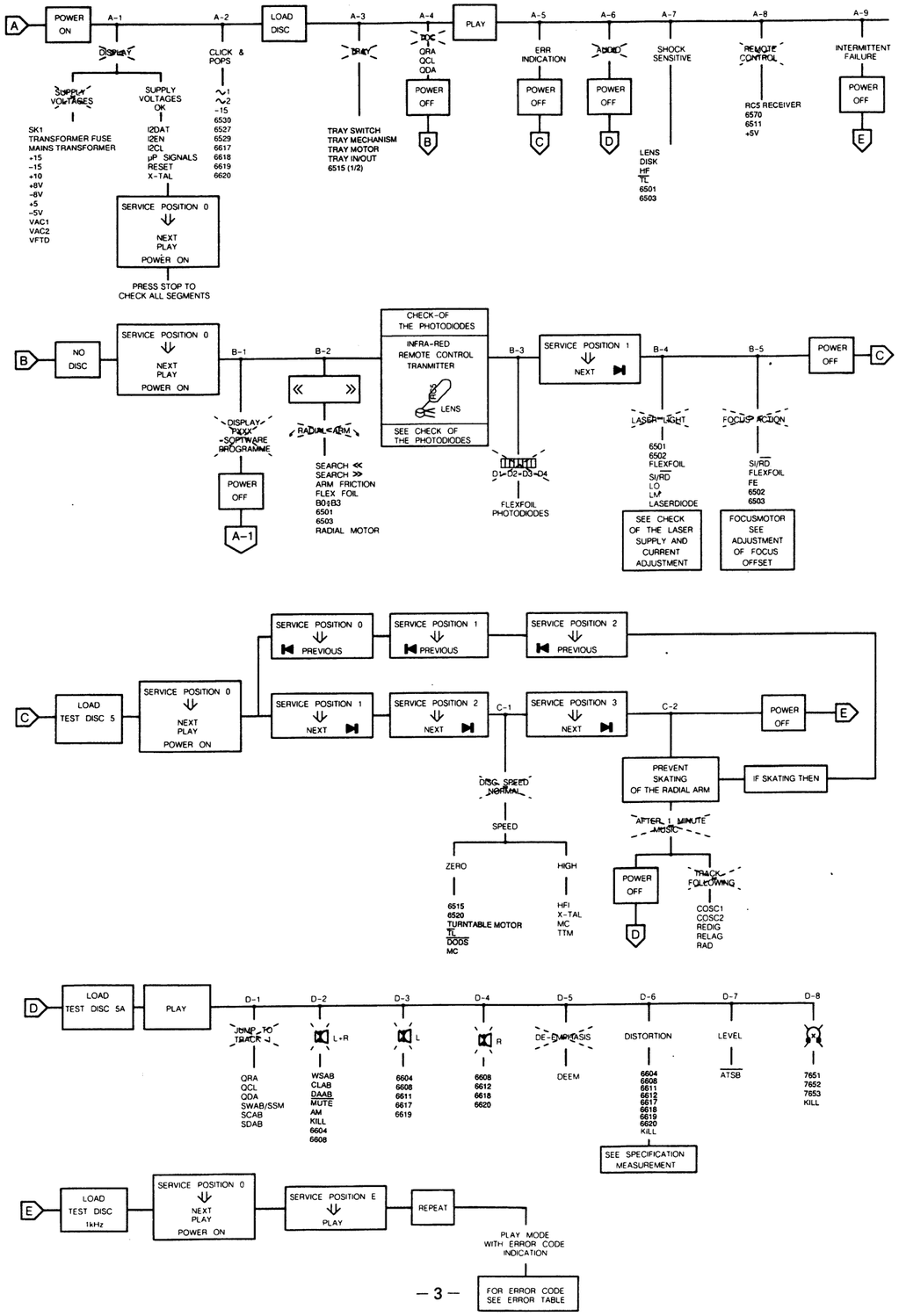
FAULTFINDING GUIDE

TROUBLE SHOOTING (FAULT FINDING TREE)

Follow the path of the faultfinding tree beginning at the top left. Perform the actions you come across in the various blocks.
Look at the various side branches to find out if the information you see there applies to your problem. If, for instance, you find the indication "display" this means that no picture appears on the display.

If you establish this fault, follow the branch and perform the recommended actions. Check the signals mentioned. In a number of branches further reference is made to measurements you could carry out.
These measurements are explained in several tables further on in this manual.

START-UP PROCEDURE

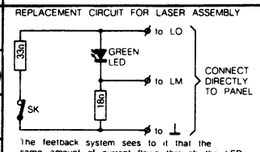


B-3 CHECK OF THE PHOTODIODES

Step	Signal	Mode	◇	⌀	▭	⎍	Remarks
1	D2 D1 D3 D4	power on	4 6 7 8	–	–	signal 4E6E7E8	Signal depends on Distance lens ⟷ IR LED of remote control

B-4 CHECK OF LASER SUPPLY

The laser, the lasersupply plus the monitor diode form a feedback system.
A defect in the lasersupply may result in the destruction of the laser. If, in that case, the laser is replaced, (= complete C.D.M.-unit) the new laser will also become defective. However, it is impossible to check and repair a feedback system if a link is missing. For this reason the laser supply can be checked with teh replacement circuit for laser assembly.

Step	Signal	Mode	◇	▭	Remarks
1	LO	serv. pos. 2 SK	9 V	1.8<V <2.3	REPLACEMENT CIRCUIT FOR LASER ASSEMBLY  The feetback system sees to it that the same amount of current flows through the LED When SK is open and when SK is closed the LED emits little light PRS 06615 T02/9020
	LM		11 V	170<mV <220	
2	LO	serv. pos. 2 SK	9 V	1.8<V <2.3	
	LM		11 V	170<mV <220	
3	LO	Power on	9 V	0V ± 0.2V	No light

After opening SK the led will emit a little more light for a short moment.

B-4 LASER CURRENT ADJUSTMENT

STEP	SIGNAL	MODE	◇	⌀	▭	⎍	REMARKS
1	--	POWER OFF	--	--	--	--	CHECK IF FLEX-FOIL IS PROPERLY CONNECTED
2	--	POWER OFF	11 Ω	R3519	1kΩ +10% −0	--	PRE ADJUSTMENT OHMIC VALUE
3	--	POWER OFF	--	R3553	--	--	SET TO MID-POSITION
4	LASER CURRENT ⩦ VOLTAGE ACROSS R3501	TEST DISC 5A PLAY	1 V 2 mV DC	--	⩾15mV	--	IF < 15mV THEN GO TO STEP 3 AND SET R3519 TO 1/4 OR 3/4. TRY AGAIN
5	LASER CURRENT ⩦ VOLTAGE ACROSS R3501	TEST DISC 5A PLAY	1 V 2 mV DC	R3519	50mV	--	--
6	FE-LAG	TEST DISC 5A TRACK 1 PLAY	27 V mV DC	R3533	400mV	--	FINE ADJUSTMENT

B-5 ADJUSTMENT OF FOCUS-OFFSET

Step	Signal	Mode	◇	⌀	▭	⎍	Remarks
1	–	Power on no disc	–	R3553	–	–	adjust for optical mid-position of the focus motor
2	FE LAG	Play Test disc 5 Track 1	27	R3553	400mV ± 40 mV DC	–	fine adjustment

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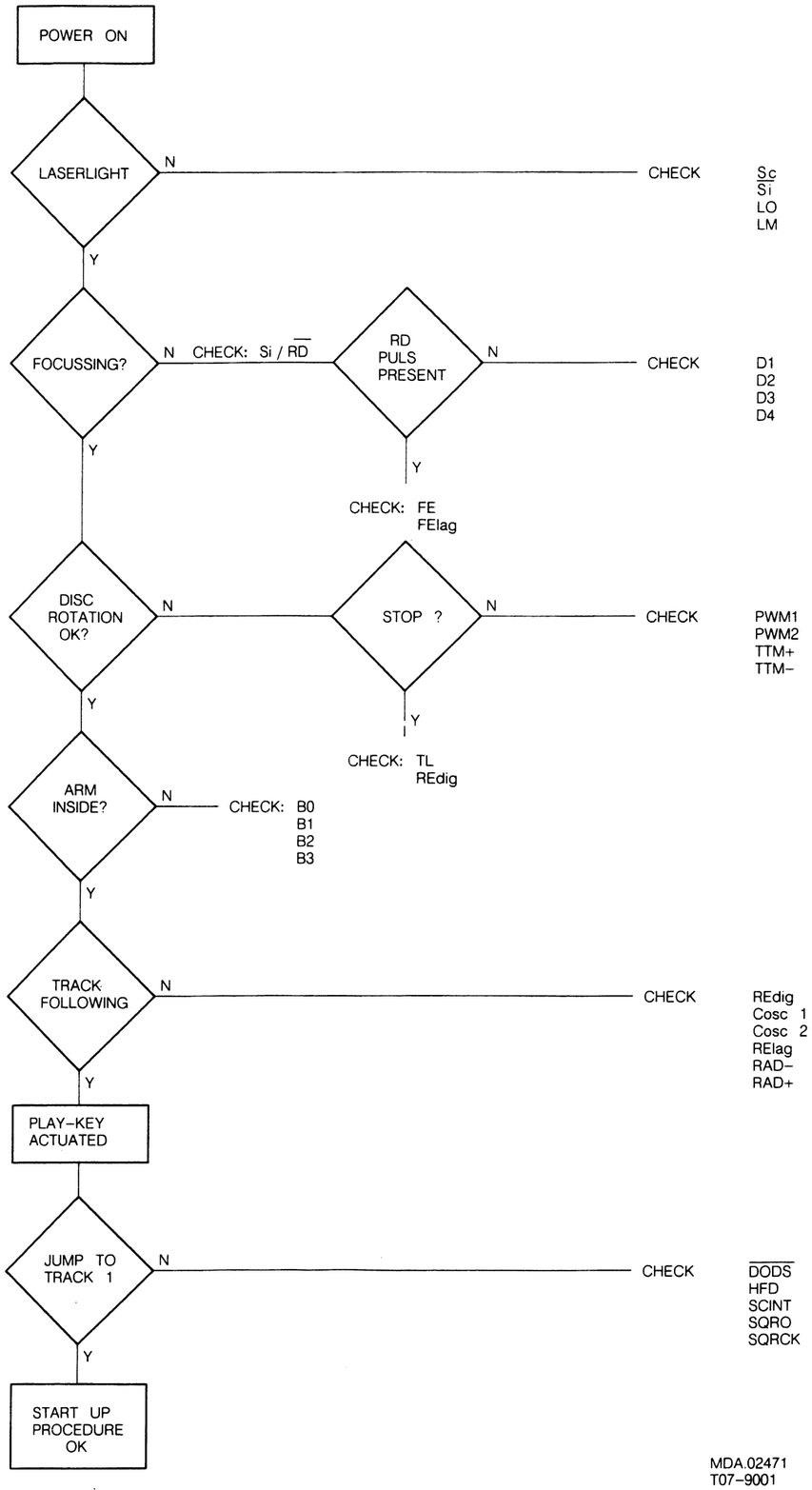
START UP PROCEDURE



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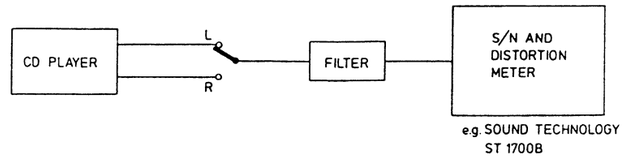
SPECIFICATION MEASUREMENT



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SYSTEM ERRORS

ERROR 02 P122	Focus error: no track loss
ERROR 03 P122	Radial start error: min. exentricity point not found
ERROR 06 P122	TL error during jump: no positive TL or RP edge during 60 x 8 ms
ERROR 07 P122	Subcode error: no valid subcode within 3 sec.
ERROR 08 P122	TOC error: out of lead-in while reading TOC
ERROR 09 P122	EEPROM cell error: EEPROM cell broken

OPERATING ERRORS

ERROR 30 P122	NEXT at a boarder when repeat is off
ERROR 31 P122	PREVIOUS at a boarder when repeat is off
ERROR 33 P122	Selected index does not exist
ERROR 34 P122	No program
ERROR 35 P122	Program memory full
ERROR 36 P122	Programed track is non existing on this CD
ERROR 37 P122	Selected track is non existing on this CD
ERROR 39 P122	STORE or CLEAR pressed while in play program
ERROR 42 P122	Selected track is not a program block
ERROR 43 P122	FTS store error: memory full
ERROR 44 P122	FTS store error: no program
ERROR 46 P122	FTS play error: no FTS program in memory
ERROR 47 P122	FTS selection error: upper bound of FTS memory (next)
ERROR 49 P122	FTS selection error: selection request while storing (next/previous)
ERROR 51 P122	FTS selection error: selection request while storing (review)
ERROR 52 P122	FTS selection clear error: clear request while storing
ERROR 54 P122	FTS store error: no record id (TOC) available
ERROR 56 P122	AB key pressed when not in play mode
ERROR 57 P122	Store pressed while there is no track selected
ERROR 60 P122	Fast forward/reverse bound
ERROR 63 P122	No track possible to play in edit mode
ERROR 74 P122	Relative time not found
ERROR 75 P122	Search time out error

SERVICING HINTS

In the set chip components have been applied.
For disassembly and assembly of chip components see the figure below.

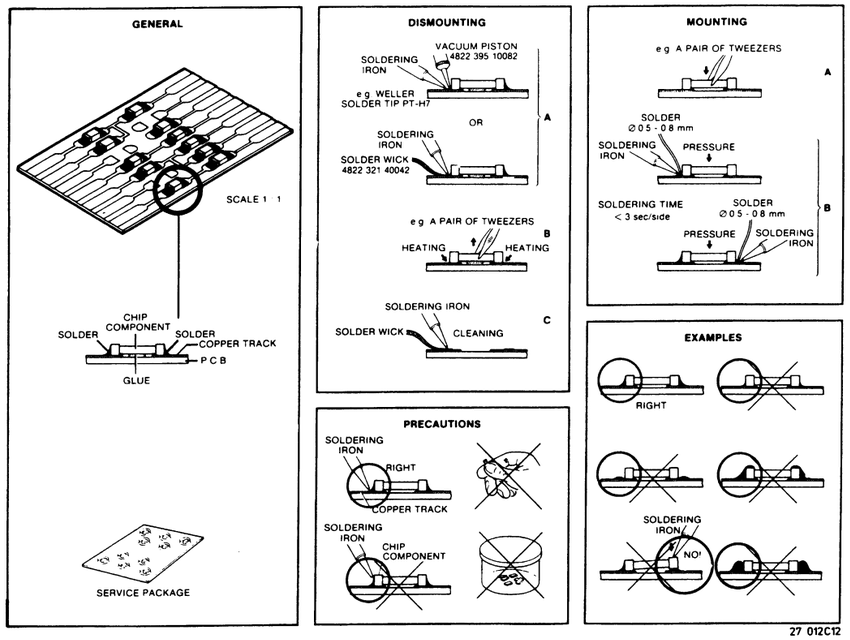
The disc should always rest properly on the turntable.
To achieve this a disc hold-down has been mounted in a bracket of the tray mechanism.
If the tray mechanism has to be disassembled for servicing, a seperate disc hold-down should be used.
(See drawing "Service disc hold-down")
The set can function normally then.
Code number of the disc hold-down is 4822 462 50383.

When the tray mechanism has been disassembled, the tray switch must be activated immediatly after pressing the play button in order to ensure normal operation.

To avoid electric shock during servicing, it is recomended to mount an insulation cover over the mains leads on the servo & decoder panel. See drawing MDA 02548. The cover can be ordered under codenumber 4822 444 60655.

SERVICE TOOLS

Audio signals disc	4822 397 30184
Disc without errors (test disc 5) + disc with DO errors, black spots and fingerprints (test disc 5A)	4822 397 30096
Disc 65 min 1 kHz without pause	4822 397 30155
Max. diameter disc(58.0 mm)	4822 397 60141
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204
Service cable (4p)	4822 321 21284
Service flexfoil (14p)	4822 322 40066
Service connector (14p)	4822 267 50676
Green LED CQY G11	5322 130 32182
Insulation cover	4822 444 60655



GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.
Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

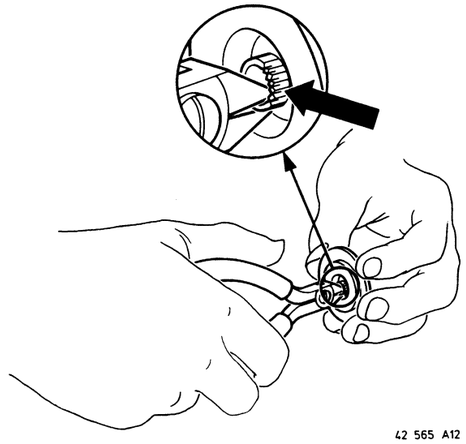
NL WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

SERVICE DISC-HOLDDOWN



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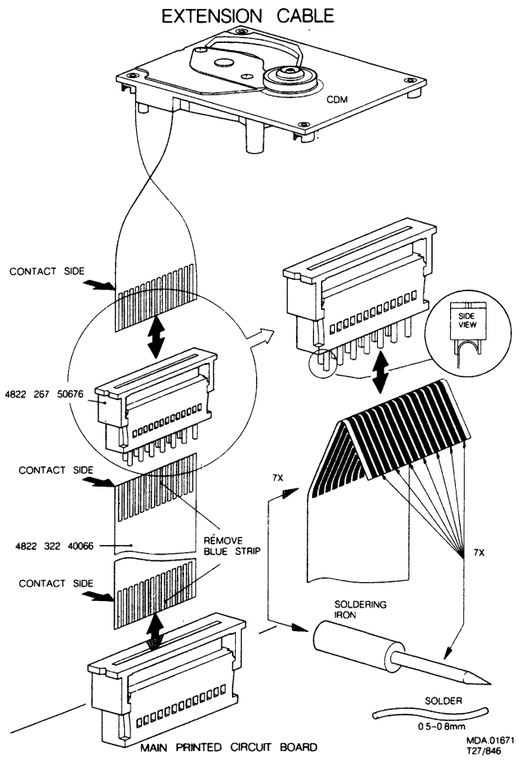
Compose a service Disc hold-down in the following way

- Cut in the most inner ring of a disc hold-down (4822 462 50383) with small and sharp nippers, see fig. above.
- Enlarge the diameter of the innermost ring slightly with the hind part of a pencil or ballpoint, so that it jams onto the turntable with sufficient force.
- If the jamming force decreases after certain time of use, the diameter has to be enlarged with a pencil or ballpoint again.

SERVICE FOIL FOR CDM



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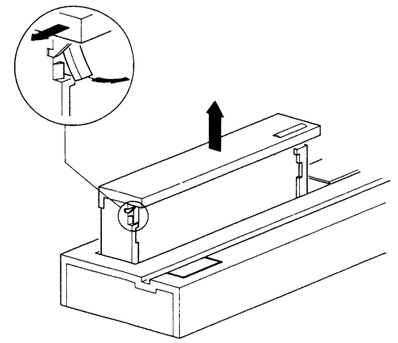
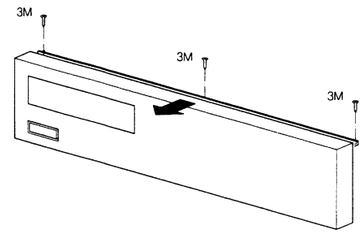
CABINET DISASSEMBLY HINTS

A



B



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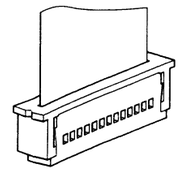

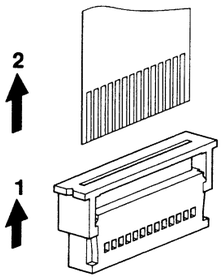

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322 397 30184

322 397 30096
322 397 30155
322 397 60141

322 395 50145
322 395 50132
322 395 30204
322 321 21284
322 322 40066
322 267 50676
322 130 32182
322 444 60655

2C12

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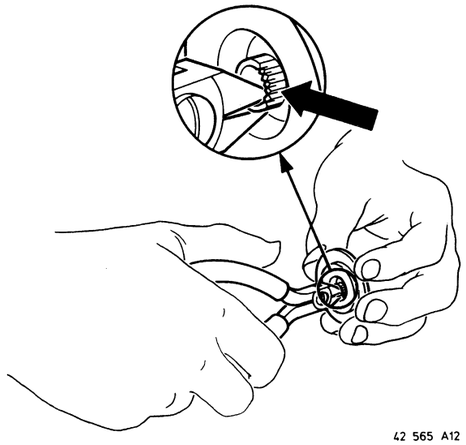
SERVICE DISC-HOLDDOWN



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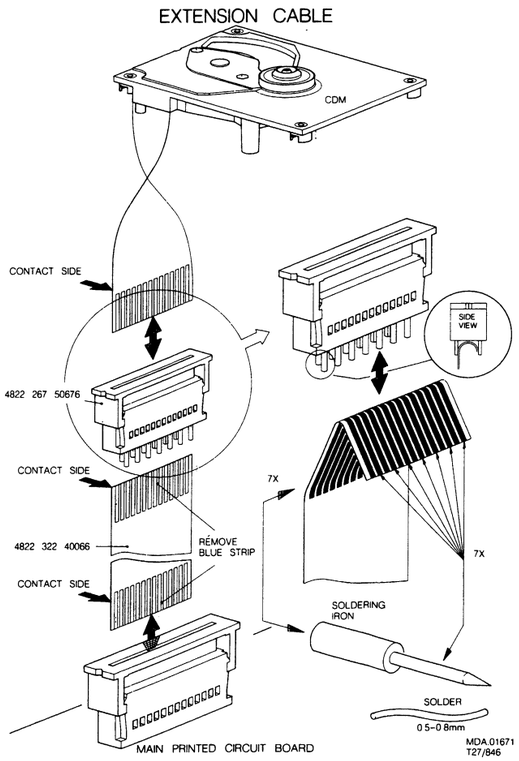
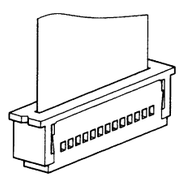
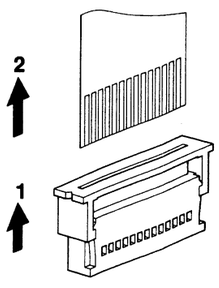


MDA.01671
T27/846

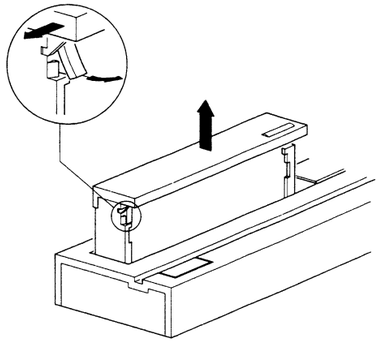




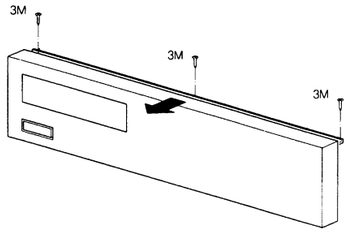
MDA.01408
T28/822

CABINET DISASSEMBLY HINTS

A

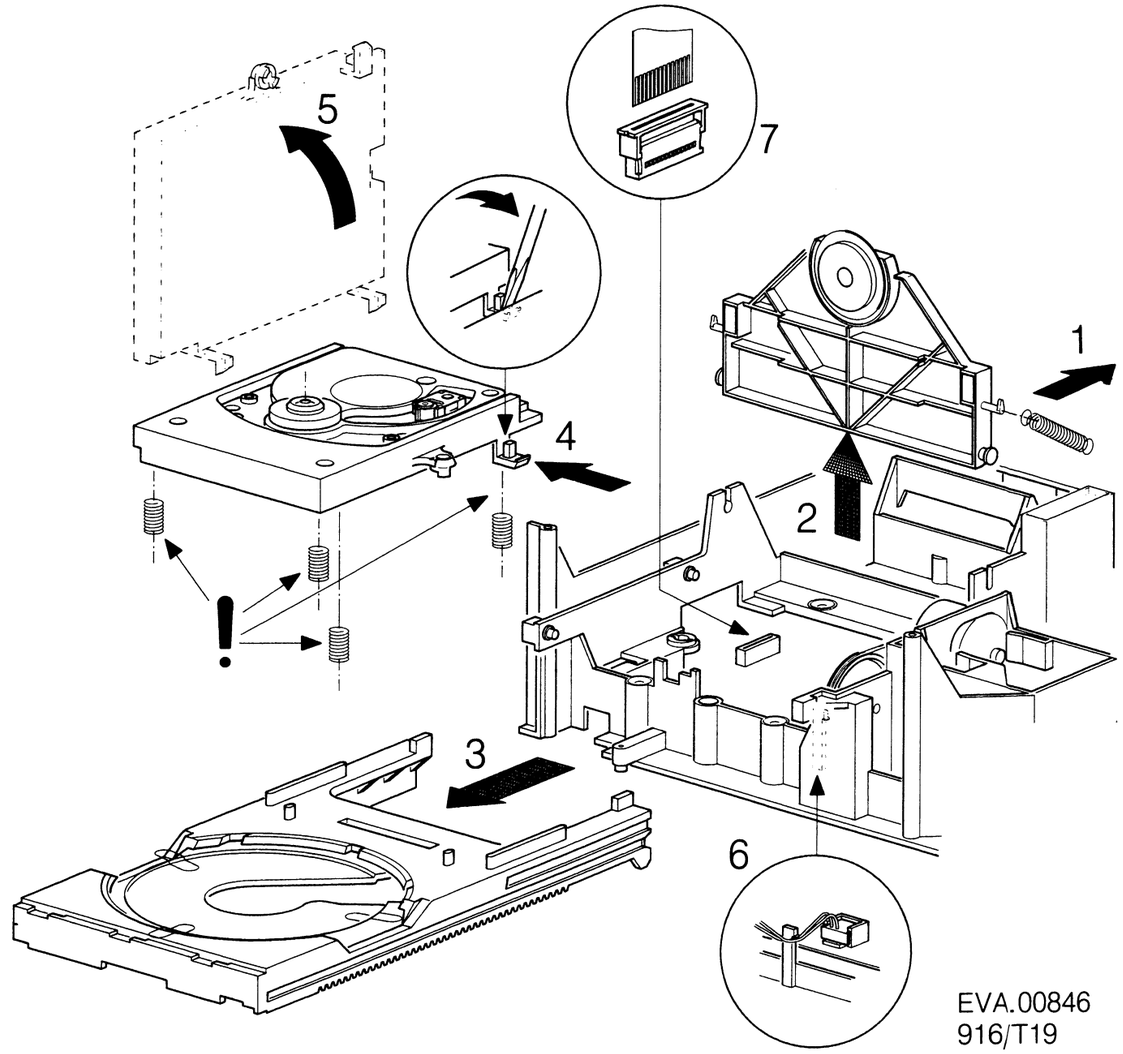


B



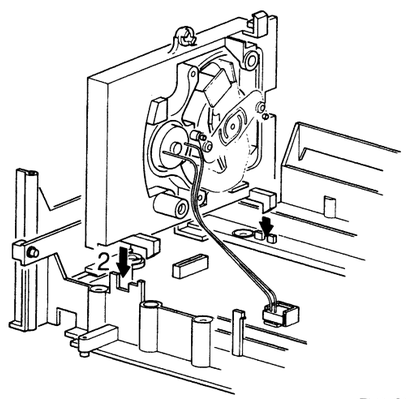
MDA.02137
916/T19

DISASSEMBLY OF LOADING AND CDM

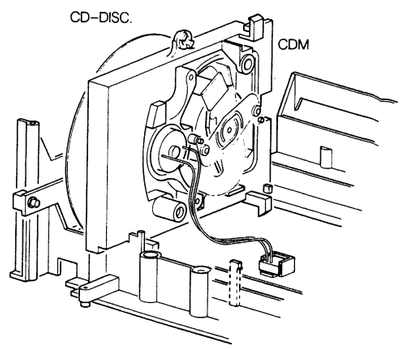


EVA.00846
916/T19

PLAY SERVICE POSITION



EVA.00848
916/T19

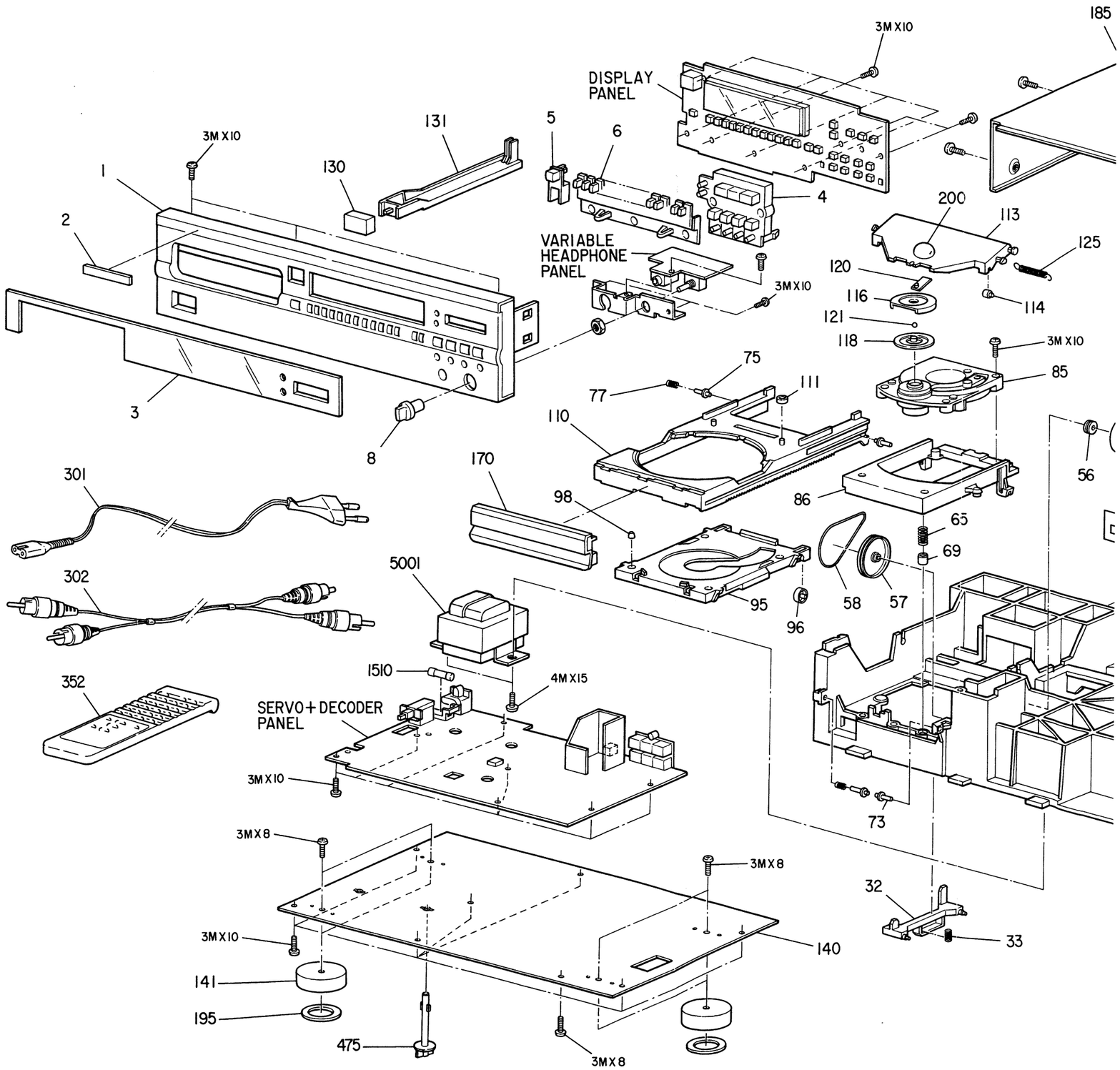


EVA.00849
916/T19

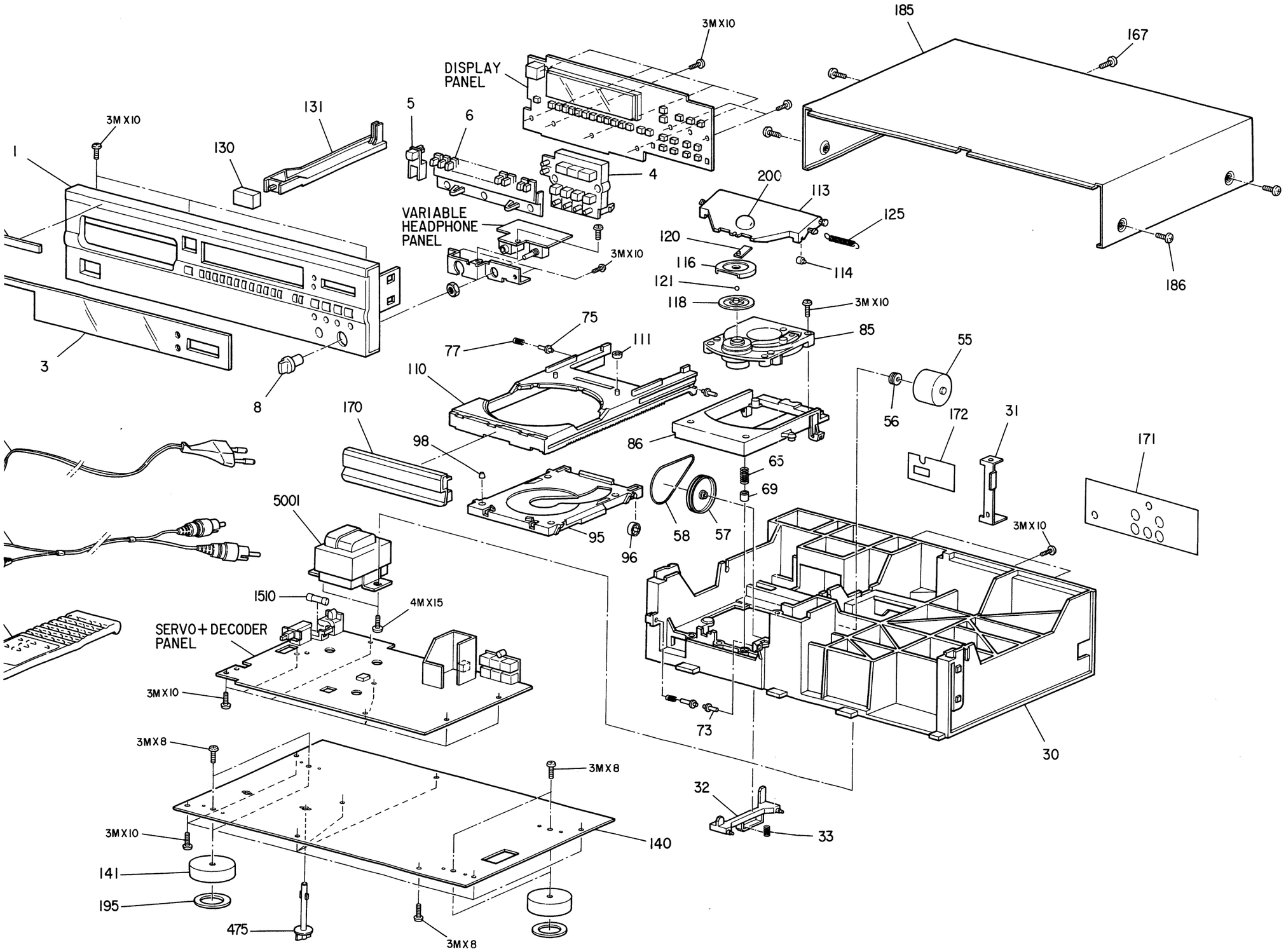
MECHANICAL PARTS LIST

1	4822 444 40476	Front for CD52
1	4822 444 40472	Front for CD42
1	4822 444 40477	Front for CD32
2	4822 459 10747	Wordmark
3	4822 450 61767	Window for CD52, CD42
3	4822 450 61785	Window for CD32
4	4822 410 61465	Button, push for CD52
4	4822 410 61459	Button, push for CD42
4	4822 410 61517	Button, push for CD32
5	4822 410 61457	Button, push
6	4822 410 61466	Set of knobs for CD52
8	4822 410 61467	Button, Head Phone for CD52
32	4822 402 50276	Bracket, Switch
33	4822 492 52123	Spring, Compres.
55	4822 361 21452	Motor
56	4822 528 81447	Pulley
57	4822 528 81329	Pulley
58	4822 358 10115	Belt, Driving
65	4822 492 51902	Spring, Compres.
69	4822 466 61587	Foam
73	4822 402 61253	Guide
75	4822 402 61252	Guide
77	4822 492 52094	Spring, Compres.
85	4822 691 30209	Mech. Unit CDM-4
86	4822 402 61196	Support
95	4822 466 93011	Plate
96	4822 528 90638	Roller
98	4822 325 50177	Grommet, Cable
110	4822 444 50603	Tray
111	4822 532 51756	Grommet
113	4822 444 60568	Lid
114	4822 528 90639	Roller
116	4822 402 61207	Holder
118	4822 530 80503	Ring, Pressure
120	4822 466 92257	Plate
121	4822 520 40177	Ball
125	4822 492 32883	Spring, Tension
130	4822 410 61458	Button, Push
131	4822 535 93251	Rod
141	4822 462 41859	Foot
167	4822 502 30677	Screw, Selftap
170	4822 454 30456	Plate, Ornament
171	4822 459 11048	Plate, Name
172	4822 459 11047	Plate, Name
185	4822 444 60766	Cover
186	4822 502 30678	Screw, Selftap
195	4822 466 40577	Felt
301	4822 321 10249	AC-Cord for /02B
301	4822 321 10719	AC-Cord for /05B
302	4822 321 22832	Cable, Connect
309	4822 736 21196	User's Manual for CD52
309	4822 736 21187	User's Manual for CD42, CD32
352	4822 218 10419	Remote Control for CD52, CD42
455	4822 600 70643	Box for CD52
455	4822 600 70641	Box for CD42
455	4822 600 70645	Box for CD32
460	4822 600 10294	Cushion
475	4822 535 92907	Key

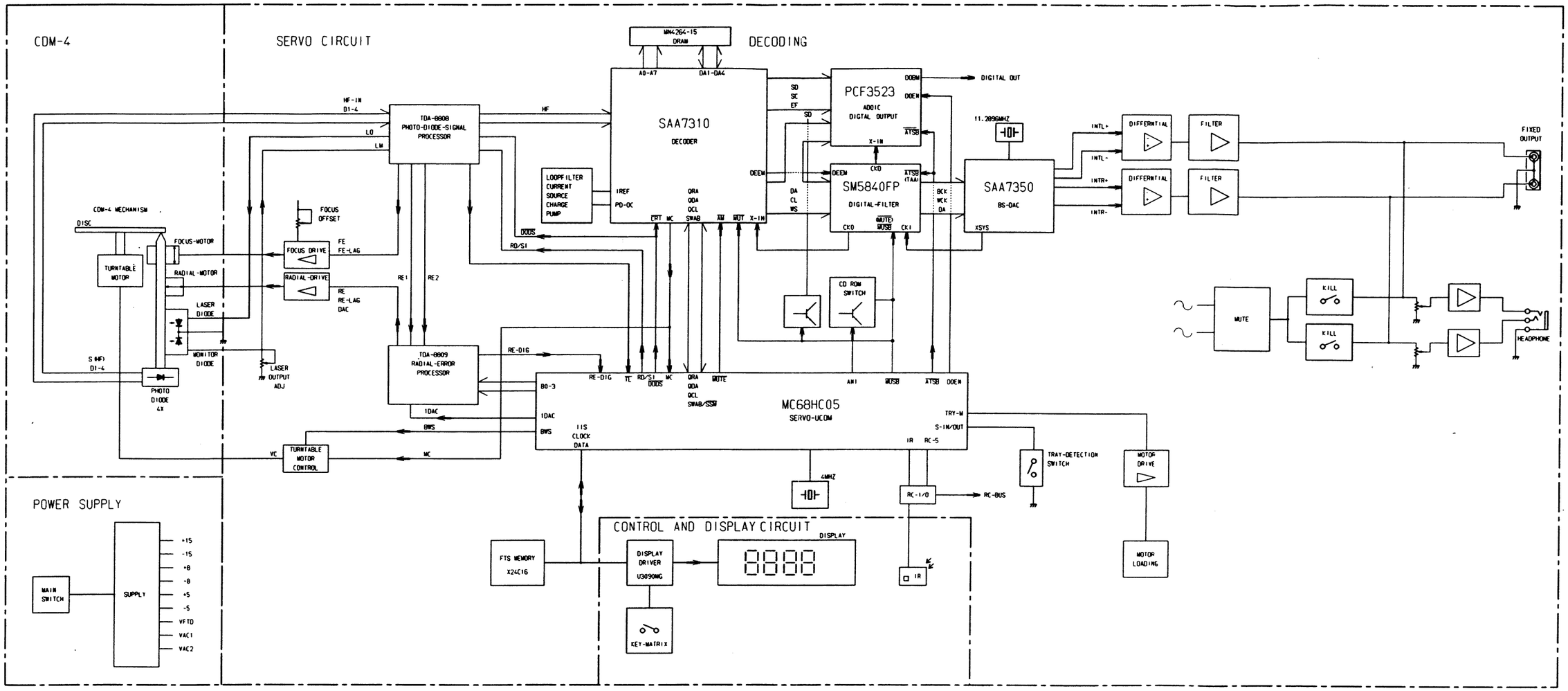
EXPLODED VIEW



) VIEW


3M X10
DISPLAY PANEL
185
167
131
5
6
130
1
4
200
113
125
VARIABLE HEADPHONE PANEL
3M X10
120
116
114
121
118
186
3M X10
75
85
77
111
55
110
56
172
31
170
86
98
65
171
69
5001
95
58
57
96
3M X10
1510
4M X15
SERVO + DECODER PANEL
3M X10
73
30
3M X8
3M X8
32
3M X10
33
140
141
195
475
3M X8

BLOCK DIAGRAM



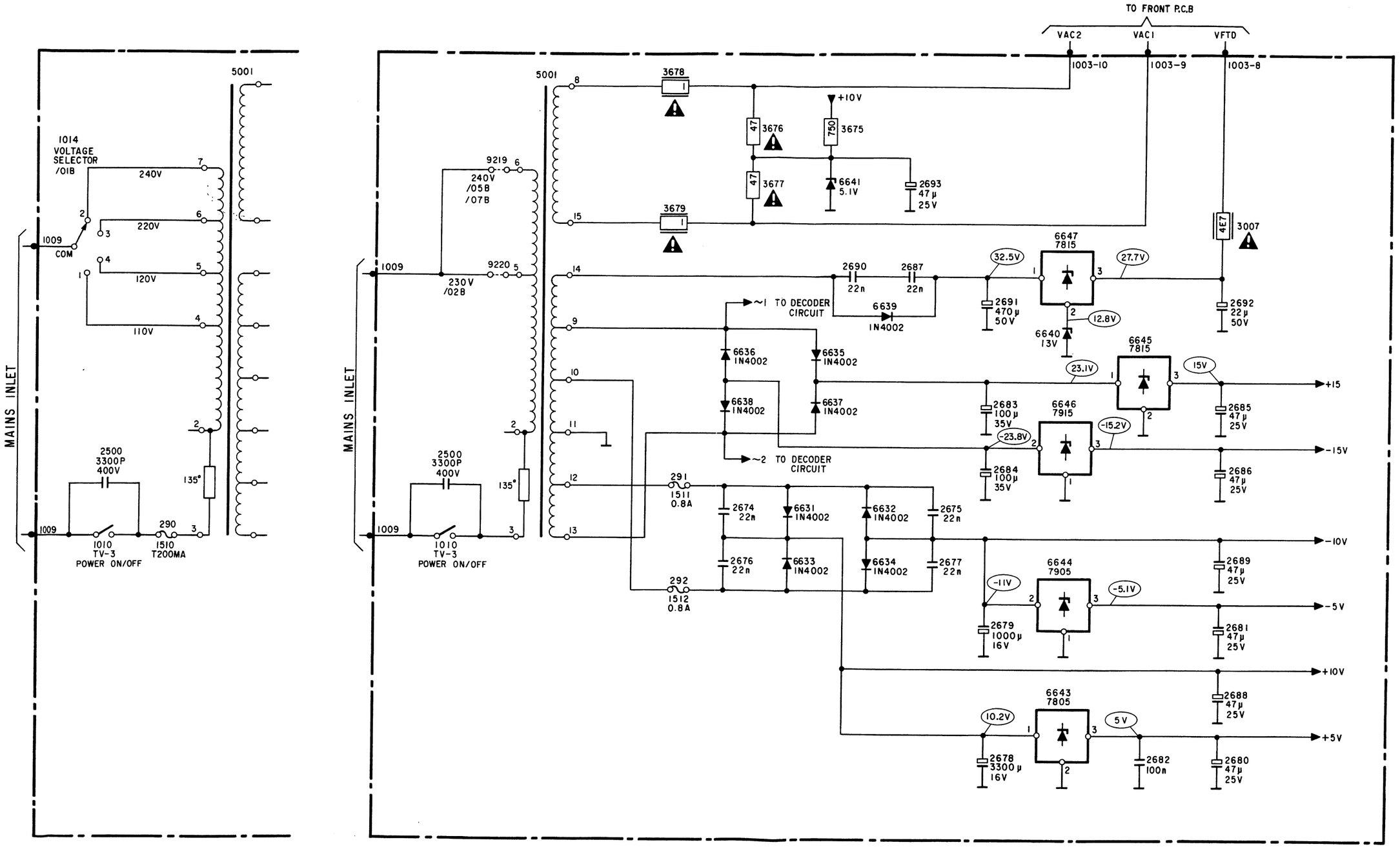
AGC-------AUTOMATIC GAIN CONTROL
B0-B3-----CONTROL BITS FOR RADIAL CIRCUIT
BEQ-------EQUALIZER REFERENCE CURRENT INPUT
BGC-------DC AND LF GAIN CONTROL REFERENCE INPUT
COSC1-----CAPACITOR WOBBLE OSCILLATOR
COSC2-----CAPACITOR WOBBLE OSCILLATOR
DEC-------DECOUPLING INPUT OF INKRUAT BYPASS
DET-------HF DETECTOR VOLTAGE INPUT
DIV4------DIVIDE BY 4 INPUT
$\overline{DODS}$------DROP OUT DETECTOR SUPPRESSION
D1-4------PHOTODIODE CURRENTS
FE--------FOCUS ERROR SIGNAL
FE LAG----FOCUS ERROR SIGNAL FOR LAG NETWORK
$\overline{HF}$--------HF OUTPUT FOR DEMOD
$\overline{HFD}$-------HF DETECTOR OUTPUT FOR DEMOD
HF IN-----HF CURRENT INPUT TO HF AMPLIFIRE
HF OUT----HF AMPLIFIRE AND EQUALIZER VOLTAGE OUTPUT

LM---------LASER MONITOR DIODE INPUT
LO---------LASER AMPLIFIRE CURRENT OUTPUT
MC---------MONITOR CONTROL SIGNAL
OFFSET IN--OFFSET IN-OFFSET CONTROL INPUT
$\overline{OFFSET}$ OUT-OFFSET OUT-OFFSET CONTROL OUTPUT
$\overline{PLLH}$-------PLL ON HOLD OUTPUT
RADOUT-----OUTPUT OF RE2-RE1 INPUT
RE---------RADIAL ERROR SIGNAL
ROSC-------RESISTOR WOBBLE OSCILLATOR
RWOB-------WOBBLE GENERATOR INPUT
RE1--------RADIAL ERROR SIGNAL 1
RE2--------RADIAL ERROR SIGNAL 2
RE DIG-----RADIAL ERROR DIGITAL
RE LAG-----RADIAL ERROR SIGNAL FOR LAG NETWORK
SC---------STARTING UP CAPACITOR INPUT
SI/RD------ON/OFF CONTROL FOR LASER SUPPLY AND FOCUS CIRCUIT.READY SIGNAL. STARTING UP

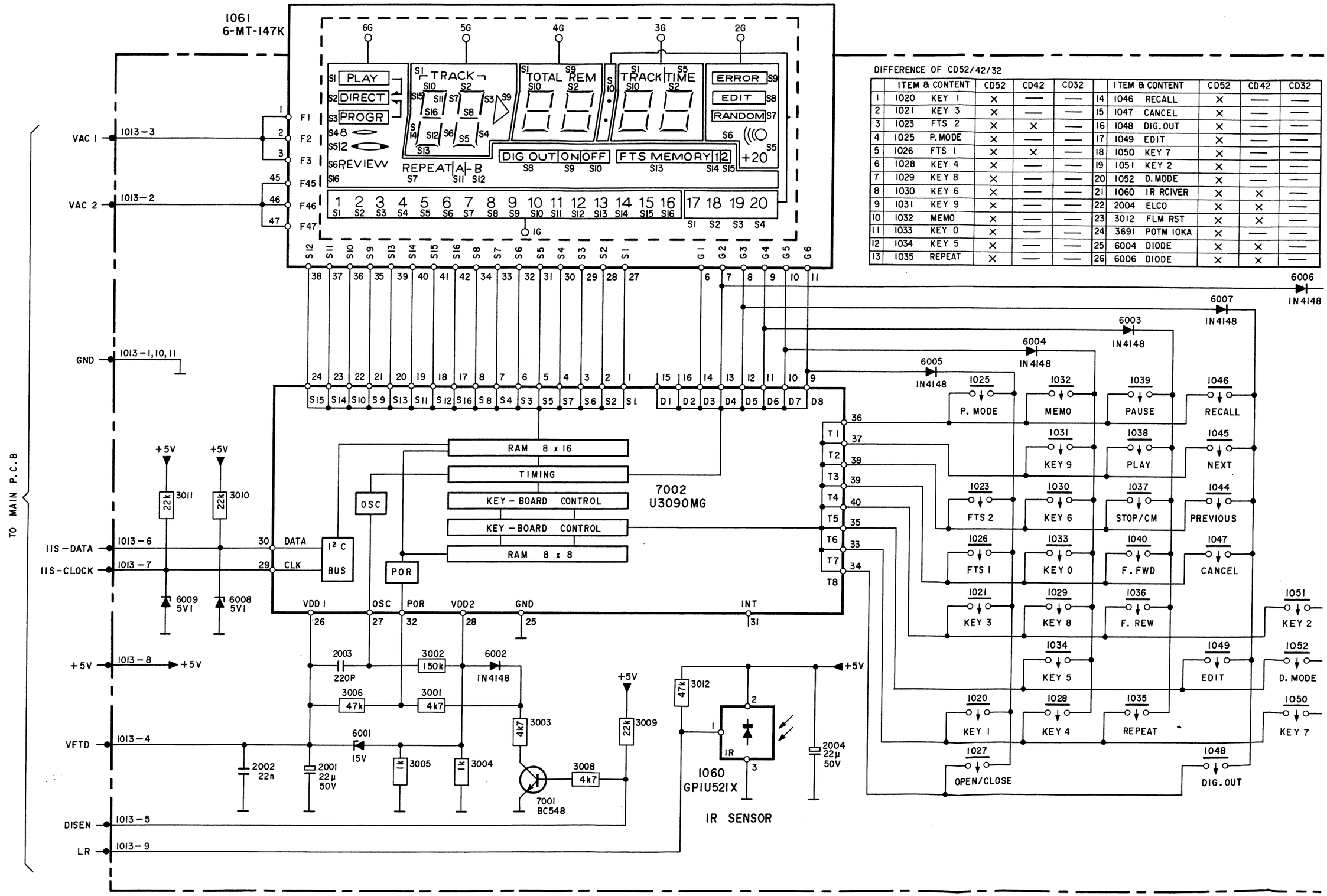
$\overline{TL}$--------TRACK LOSS OUTPUT SIGNAL
TTM+ ----CONTROL VOLTAGE FOR TURNTABLE MOTOR
TTM- ----CONTROL VOLTAGE FOR TURNTABLE MOTOR
VEXT- ---SUPPLY CONNECTION
VEXT+ ---SUPPLY CONNECTION
TCMP------TURNTABLE CONTROL MOTOR PULSE
BWS-------BAND WIDTH SWITCH 8 OR 12CM DISC
ANI-------DIGITAL DATA INFORMATION ON DISC SIGNAL
$\overline{AM}$--------ADDITIONAL MUTE
$\overline{ATSB}$ -----ATTENUATION OF AUDIO LEVEL IN SEARCH POSITION
CD ROM----DIGITAL DATA INFOMATION ON DISC SIGNAL SWITCH
CEFM------CLOCK EIGHT TO FOURTEEN MODULATER
CL--------CLOCK SIGNAL DECODER TO FILTER
BCK-------CLOCK SIGNAL FILTER TO DAC
$\overline{CREF}$------REFERENCE CURRENT
$\overline{CRI}$-------COUNTER RESET INHIBIT
1DAC------ANTI SKATING CONTROL

DA--------DATA SIGNAL DECODER TO FILTER
DEEM------DEEMPHASIS
DOBM------DIGITAL OUT SIGNAL
DOEM------DIGITAL OUTPUTENABLE
$\overline{EF}$--------ERROR FLAG DECODER TO FILTER
$\overline{MUTE}$ -----MUTE SIGNAL
$\overline{MUSB}$------SOFT MUTE SIGNAL
PD/OC-----PHASE DETECTOR-OSCILLATOR CONTROL
QCL-------Q-CHANNEL CLOCK SIGNAL
QDA-------Q-CHANNEL DATA SIGNAL
QRA-------Q-CHANNEL REQUEST AKNOWLEDGE
SC--------SUBCODE CLOCK DECODER TO FILTER
SD--------SUBCODE DATA DECODER TO FILTER
SWAB/$\overline{SSM}$--SUBCODE WORD/START-STOP MOTOR SIGNAL
WS--------WORD SELECT DECODER TO FILTER
TRY-M ---TRAY MOTOR CONTROL
WCK-------WORD SELECT FILTER TO DAC
XIN-------OSCILLATOR SIGNAL IN
XSYS------OSCILLATOR SIGNAL OUT

POWER SUPPLY CIRCUIT DIAGRAM

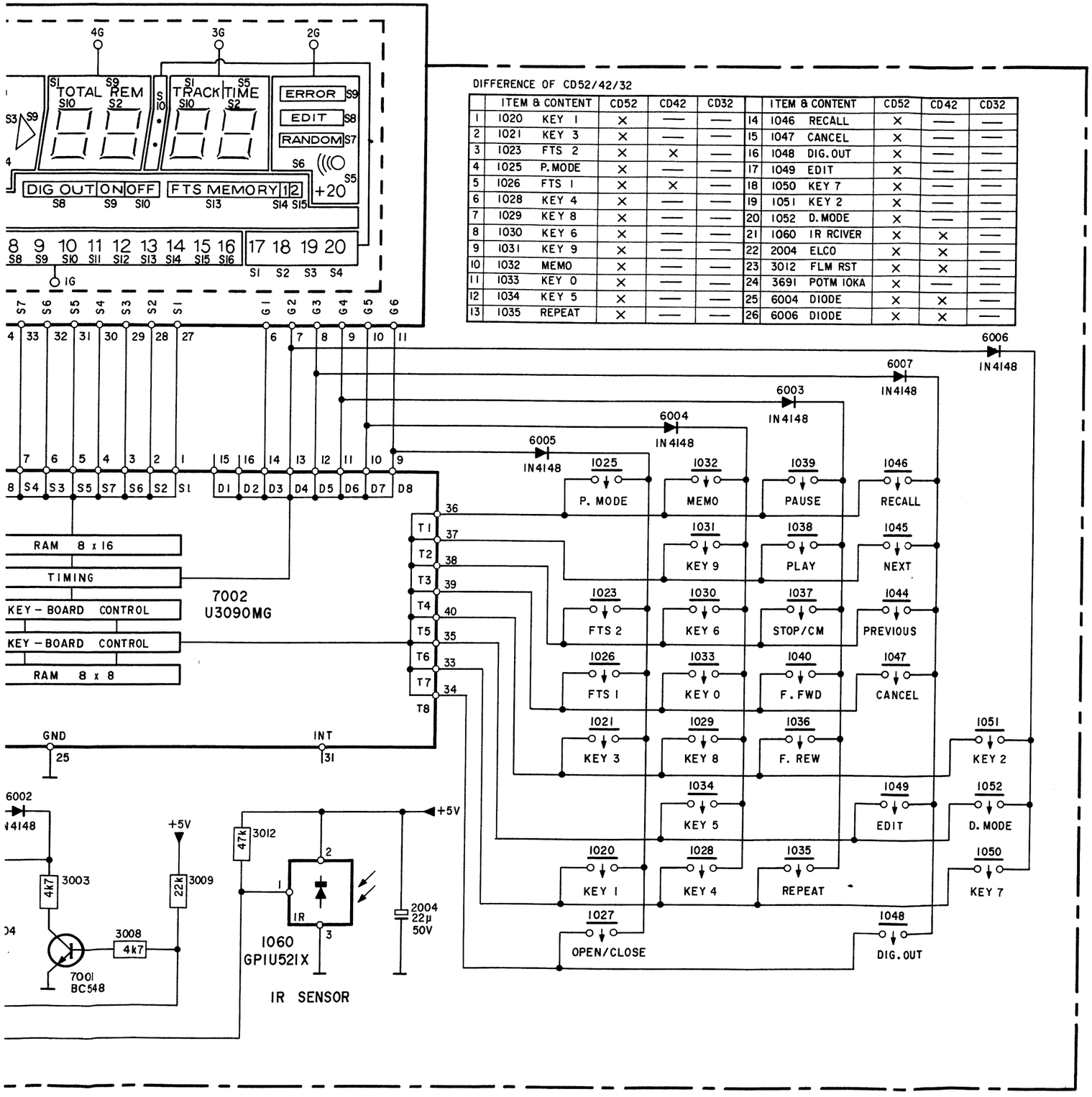


DISPLAY CIRCUIT DIAGRAM



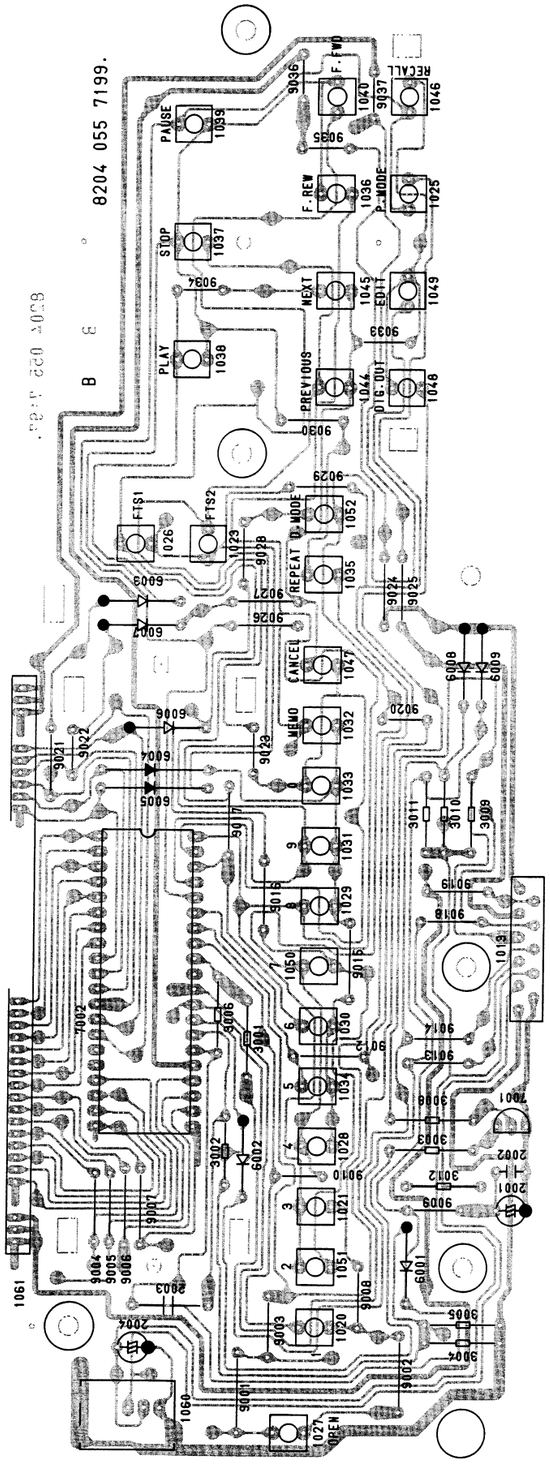
DIFFERENCE OF CD52/42/32

	ITEM & CONTENT	CD52	CD42	CD32		ITEM & CONTENT	CD52	CD42	CD32
1	1020 KEY 1	×	—	—	14	1046 RECALL	×	—	—
2	1021 KEY 3	×	—	—	15	1047 CANCEL	×	—	—
3	1023 FTS 2	×	×	—	16	1048 DIG.OUT	×	—	—
4	1025 P.MODE	×	—	—	17	1049 EDIT	×	—	—
5	1026 FTS 1	×	×	—	18	1050 KEY 7	×	—	—
6	1028 KEY 4	×	—	—	19	1051 KEY 2	×	—	—
7	1029 KEY 8	×	—	—	20	1052 D.MODE	×	—	—
8	1030 KEY 6	×	—	—	21	1060 IR RCIVER	×	×	—
9	1031 KEY 9	×	—	—	22	2004 ELCO	×	×	—
10	1032 MEMO	×	—	—	23	3012 FLM RST	×	×	—
11	1033 KEY 0	×	—	—	24	3691 POTM 10KA	×	—	—
12	1034 KEY 5	×	—	—	25	6004 DIODE	×	×	—
13	1035 REPEAT	×	—	—	26	6006 DIODE	×	×	—

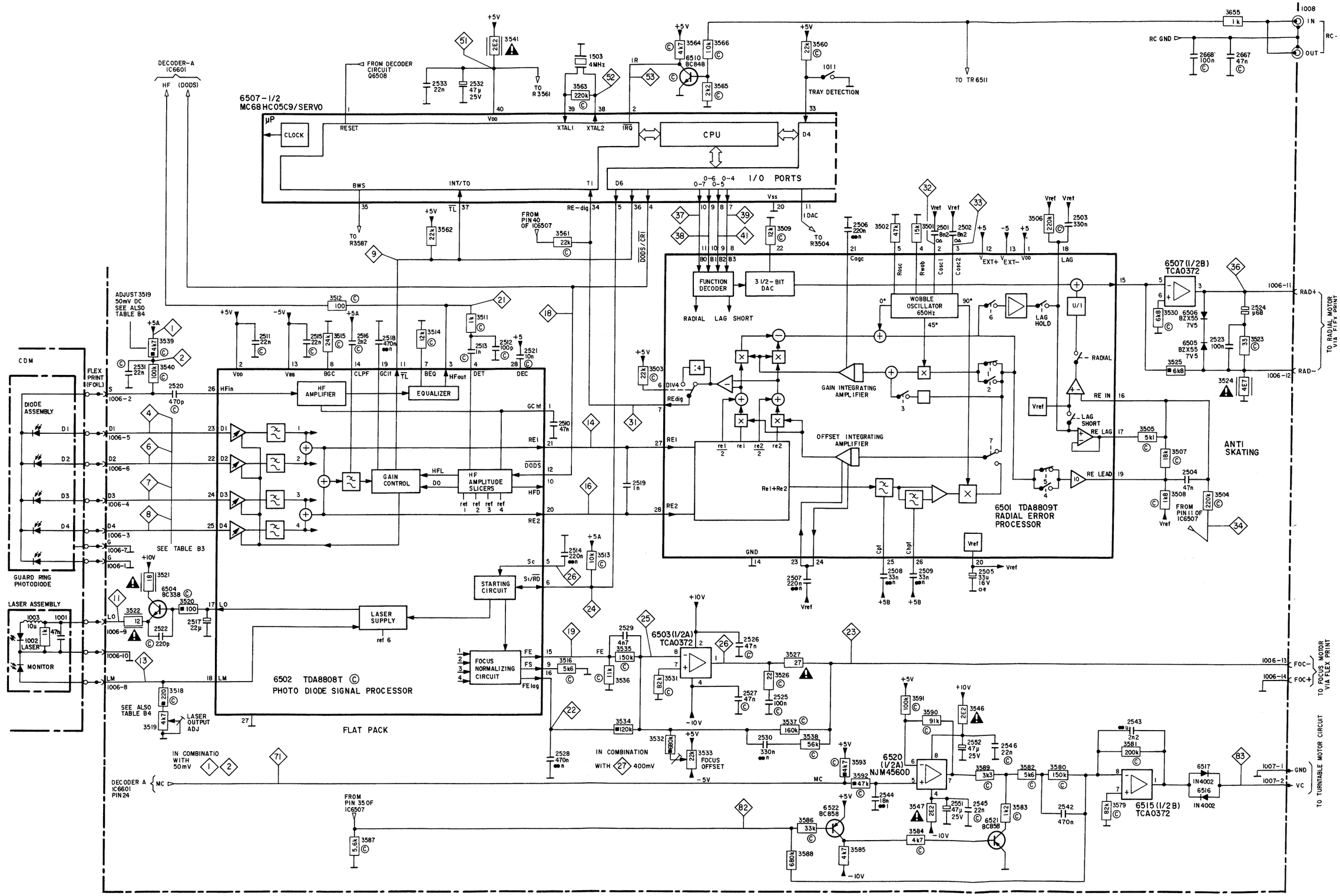


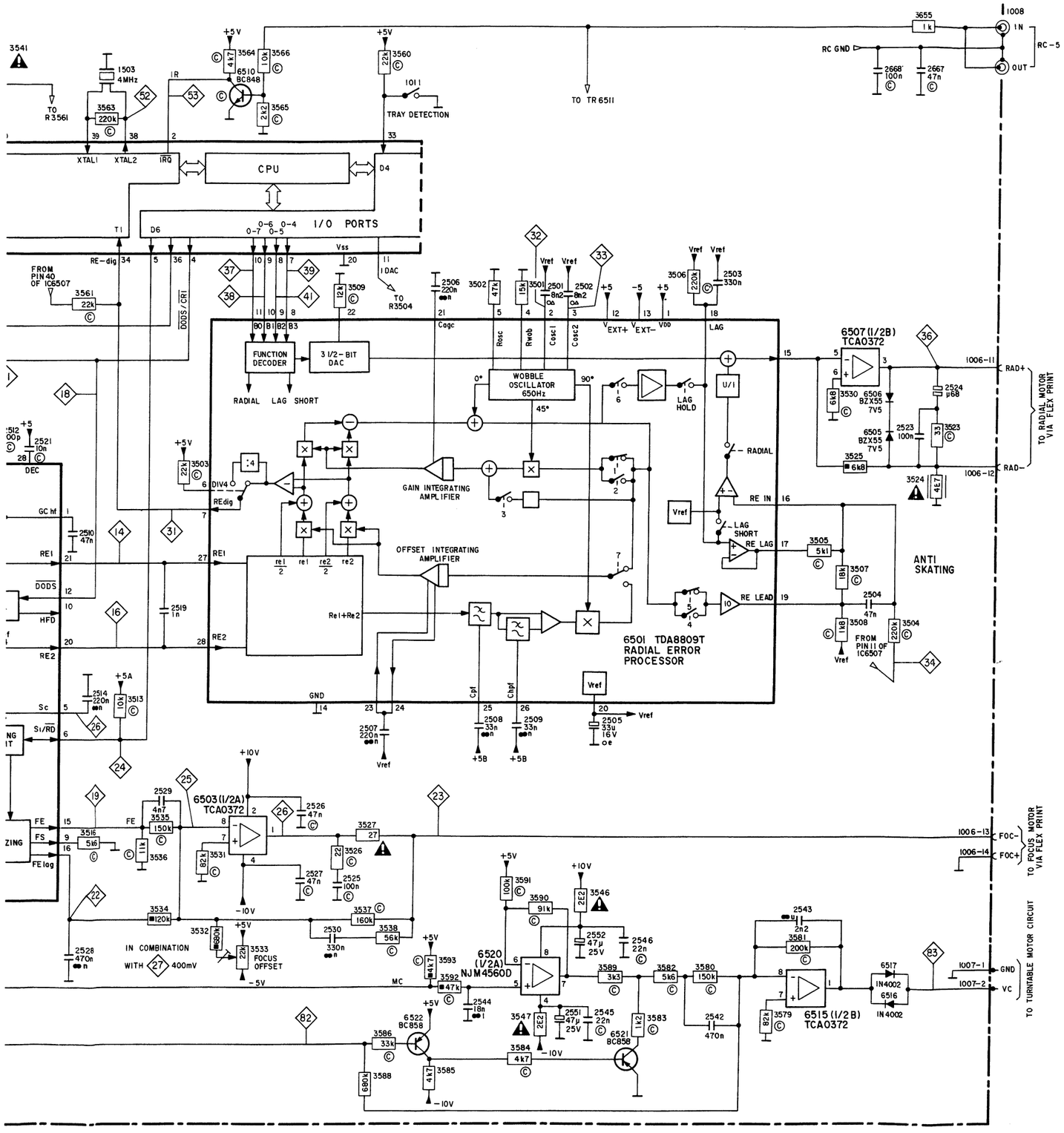
DIFFERENCE OF CD52/42/32

	ITEM & CONTENT	CD52	CD42	CD32		ITEM & CONTENT	CD52	CD42	CD32
1	1020 KEY 1	×	—	—	14	1046 RECALL	×	—	—
2	1021 KEY 3	×	—	—	15	1047 CANCEL	×	—	—
3	1023 FTS 2	×	×	—	16	1048 DIG.OUT	×	—	—
4	1025 P.MODE	×	—	—	17	1049 EDIT	×	—	—
5	1026 FTS 1	×	×	—	18	1050 KEY 7	×	—	—
6	1028 KEY 4	×	—	—	19	1051 KEY 2	×	—	—
7	1029 KEY 8	×	—	—	20	1052 D.MODE	×	—	—
8	1030 KEY 6	×	—	—	21	1060 IR RCIVER	×	×	—
9	1031 KEY 9	×	—	—	22	2004 ELCO	×	×	—
10	1032 MEMO	×	—	—	23	3012 FLM RST	×	×	—
11	1033 KEY 0	×	—	—	24	3691 POTM 10KA	×	—	—
12	1034 KEY 5	×	—	—	25	6004 DIODE	×	×	—
13	1035 REPEAT	×	—	—	26	6006 DIODE	×	×	—



SERVO CIRCUIT DIAGRAM





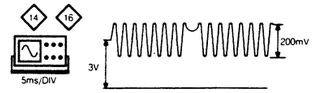
1 2 ADJUST R3520
50mV DC
SEE ALSO TABLE

4 5 7 8 SEE TABLE B 3

9 LOW PULSES DURING SEARCH

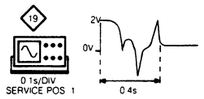
11 13 SAEE TABLE B-4

14 16



18 LOW PULSES DURING ‹TRACK AND TRACK ›

19



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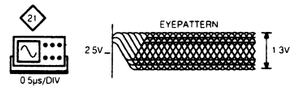
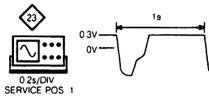
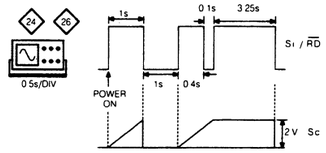


22 ADJUST R3568
400mV DC
SEE ALSO TABLE B-5

23



24 26



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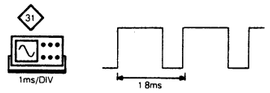
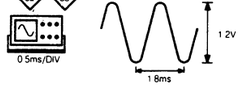
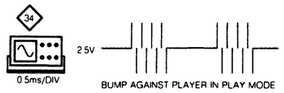


32 33



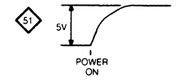
34



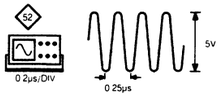
37 38 39 41

SERVICE POSITION 0		PLAY MODE
‹‹ SEARCH ››		SEARCH
B3 HIGH	HIGH	ACTIVITY
B2 HIGH	LOW	ACTIVITY
B1 HIGH	HIGH	ACTIVITY
B0 LOW	LOW	ACTIVITY

51



52



82 0 V FOR 12 cm DISC
5 V FOR 8 cm DISC

83 -1 V AT BEGINNING OF DISC
-0 6 V AT END OF DISC

SERVO & DECODER PANEL SOLDER SIDE

290 B1	1503 C5	2511 C1	2526 D1	2545 C6	2608 D7	2624 C9	2639 B8	2665 A9	2680 A6	2695 A9	3513 C1	3530 D1	3546 E5	3561 D5	3580 D5	3595 D5	3610 D6	3625 B9	3643 B8	3668 A8	3695 E5	6508 E1	6525 B4	6606 D9	6636 B4	8003 C5	9115 C2	9130 B3	9146 D4	9163 C6	9178 D7	9194 E8	9209 D8
291 A5	1510 B1	2512 C1	2527 D1	2546 E5	2609 D7	2625 B7	2640 B8	2666 A7	2681 A6	2696 A9	3514 C1	3531 D1	3547 E5	3562 C2	3581 D5	3596 B6	3611 C7	3626 B7	3644 B7	3669 A7	3696 A4	6509 E6	6526 B4	6608 C8	6637 B4	9100 C0	9116 D2	9131 B3	9147 E5	9164 D6	9179 D7	9195 C8	9210 C8
292 A5	1511 A5	2513 C1	2528 C0	2547 B5	2610 C9	2626 C9	2641 B8	2667 A7	2682 A6	3007 C5	3515 C1	3532 D2	3548 D6	3563 C5	3582 D5	3597 B4	3612 C7	3627 B8	3645 C7	3670 D9	3800 B6	6510 C6	6527 B5	6611 B8	6638 B4	9101 C0	9117 D2	9132 D3	9148 D4	9165 D6	9180 D7	9196 C8	9211 B8
1000 D8	1512 A5	2514 C1	2530 D0	2548 B5	2611 C9	2627 B7	2642 B9	2668 A7	2683 B5	3501 C3	3516 C2	3533 E2	3549 D6	3564 C6	3583 D5	3598 B5	3613 C9	3630 C8	3646 C9	3671 D8	3801 B7	6511 C6	6528 B5	6612 B7	6639 B3	9102 D1	9118 D2	9133 E4	9149 B9	9166 C6	9181 D7	9197 D8	9212 D9
1003 C6	2500 B0	2515 D3	2531 C1	2549 B4	2612 B6	2628 C9	2643 B7	2669 A8	2684 B5	3502 C3	3517 C4	3534 D2	3550 C6	3565 C6	3584 E5	3599 B6	3614 C7	3631 B8	3647 D7	3673 D8	3999 C2	6512 C6	6529 B6	6615 D8	6640 B6	9103 B1	9119 D2	9134 B3	9151 D5	9167 A6	9183 C7	9198 B8	9213 C9
1004 A9	2501 B3	2516 C2	2532 C5	2551 E5	2614 C7	2629 B8	2651 B8	2670 A8	2685 A7	3503 C2	3518 C0	3535 D2	3551 C6	3566 C6	3585 E5	3600 B4	3615 C9	3632 B7	3649 B8	3674 D8	5001 B2	6513 C6	6530 B6	6617 A9	6641 B4	9104 C1	9120 D2	9135 C4	9152 B5	9168 B6	9184 C7	9199 A8	9214 D9
1005 C5	2502 B3	2517 C2	2533 D5	2552 E5	2615 C7	2630 B9	2652 B7	2671 A8	2686 B7	3504 D3	3519 C0	3536 D2	3552 C6	3568 C6	3586 E4	3601 E9	3616 B7	3633 B9	3650 B7	3675 B3	5501 B9	6514 C5	6531 B6	6618 A8	6642 C5	9105 D1	9121 D2	9136 A5	9153 B5	9169 B6	9185 C7	9200 D8	9215 D9
1006 D0	2503 D3	2518 C2	2534 E6	2553 C5	2616 C7	2631 B8	2653 B9	2672 D9	2687 B3	3505 D3	3520 D1	3537 D1	3553 C6	3569 C6	3587 E4	3602 E7	3617 C9	3634 B7	3655 C7	3676 C4	5502 B7	6515 D4	6532 E5	6619 A9	6643 A5	9106 D1	9122 D2	9137 A4	9154 B5	9170 B6	9186 B7	9201 E8	9216 D9
1007 E3	2504 D3	2519 D2	2536 B9	2601 E9	2617 C7	2632 B9	2654 A7	2673 D9	2688 E5	3506 D3	3521 D0	3538 D0	3554 D6	3570 D6	3588 E4	3603 E7	3618 B7	3635 B9	3661 A9	3677 C4	6501 D3	6516 E4	6533 D6	6620 A8	6644 A6	9107 E1	9123 D2	9138 D4	9155 D5	9171 E6	9187 B7	9202 E8	9217 D9
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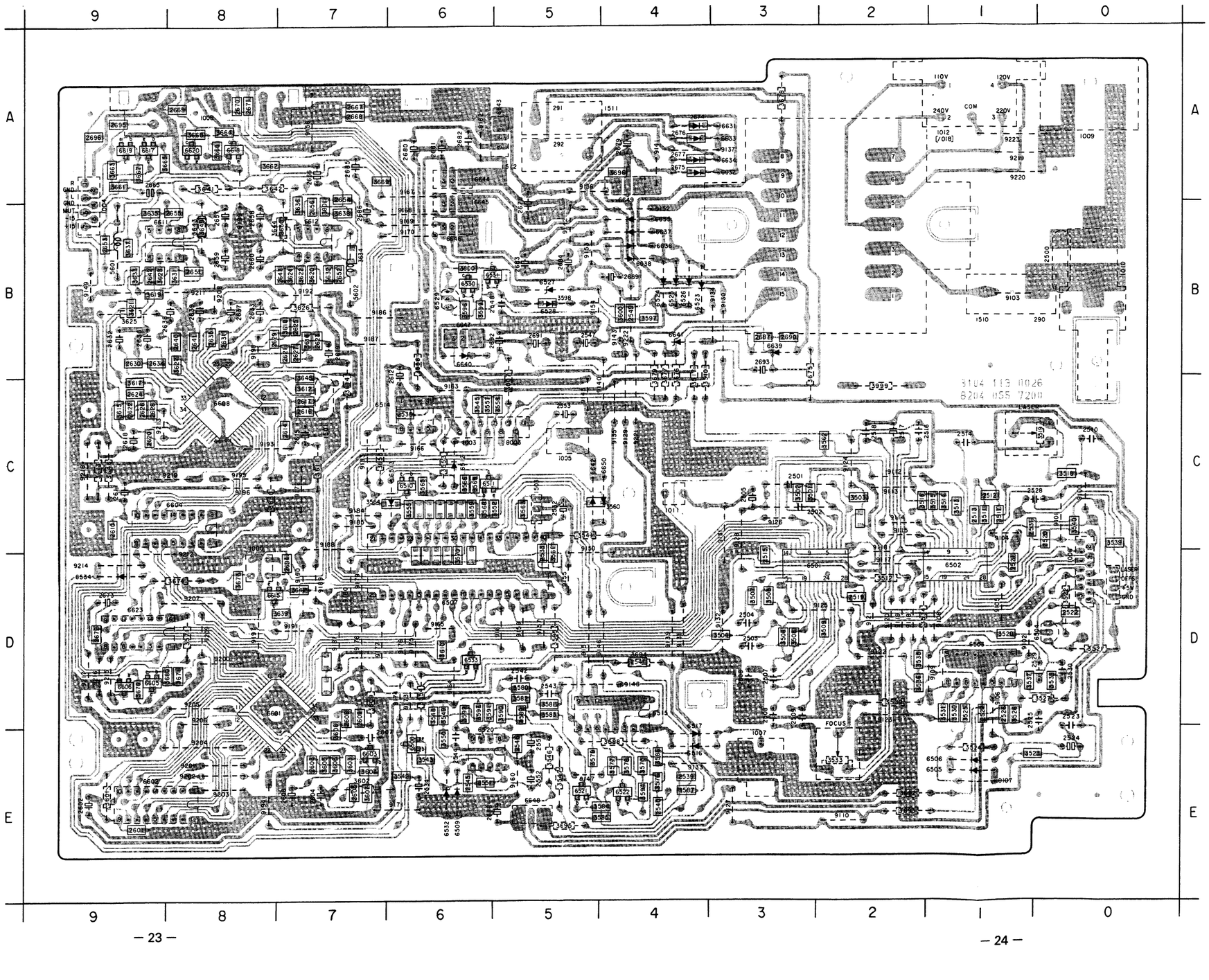
1009 A0	2506 D3	2521 D1	2540 E4	2603 E7	2619 B7	2634 B9	2656 B7	2675 A4	2690 B3	3508 D3	3523 E1	3540 C0	3556 B6	3575 E4	3590 D5	3605 E7	3620 B7	3637 B9	3663 A9	3679 C4	6503 D1	6518 E5	6601 D8	6631 A4	6646 B6	9109 D1	9125 D2	9140 C4	9157 D5	9173 D6	9189 D7	9204 E8	9219 A1
1010 B0	2507 D3	2522 D0	2541 D4	2604 E7	2620 C9	2635 B8	2657 B8	2676 A4	2691 B5	3509 D2	3524 E1	3541 C5	3557 C6	3576 E4	3591 D6	3606 E7	3621 B9	3638 B7	3664 A8	3680 D8	6504 D0	6521 E5	6602 E8	6632 A4	6647 B6	9110 E2	9126 B3	9141 A4	9159 D5	9174 D6	9190 D7	9205 D8	9220 A1
1011 C4	2508 D3	2523 E0	2542 D5	2605 E7	2621 B7	2636 C6	2658 B8	2677 A4	2692 B5	3510 C4	3525 D1	3542 C6	3558 C5	3577 E4	3592 D6	3607 E7	3622 B7	3639 D7	3665 A9	3692 E2	6505 E1	6522 E4	6603 E7	6633 A4	6648 E5	9112 C2	9127 E3	9142 B5	9160 E5	9175 D6	9191 D7	9206 D8	9221 C4
1012 A1	2509 D3	2524 E0	2543 D5	2606 E7	2622 C9	2637 B8	2659 B8	2678 A5	2693 B3	3511 C1	3526 D1	3543 C6	3559 C6	3578 E4	3593 D6	3608 E7	3623 B9	3641 A8	3666 A8	3693 E2	6506 E1	6523 B4	6604 C8	6634 A4	6649 A4	9113 C2	9128 B3	9143 B4	9161 D5	9176 D6	9192 B7	9207 D8	9222 B4
1501 C7	2510 C0	2525 E0	2544 B6	2607 E7	2623 B7	2638 B8	2660 B8	2679 A4	2694 D7	3512 D2	3527 D0	3545 C6	3560 C5	3579 E5	3594 E4	3609 D7	3624 B7	3642 A8	3667 A9	3694 D4	6507 D6	6524 B4	6605 D9	6635 B4	6650 C4	9114 C2	9129 C4	9145 C5	9162 A6	9177 D7	9193 C8	9208 B8	9223 A1



SERVO & DECODER PANEL COMPONENT SIDE

290 B1 1503 C5 2511 C1 2526 D1 2545 C6 2608 D7 2624 C9 2639 B8 2665 A9 2680 A6 2695 A9 3513 C1 3530 D1 3546 E5 3561 D5 3580 D5 3595 D5 3610 D6 3625 B9 3643 B8 3668 A8 3695 E5 6508 E1 6525 B4 6606 D9 6636 B4 8003 C5 9115 C2 9130 B3 9146 D4 9163 C6 9178 D7 9194 E8 9209 D6
291 A5 1510 B1 2512 C1 2527 D1 2546 E5 2609 D7 2625 B7 2640 B8 2666 A7 2681 A6 2696 A9 3514 C1 3531 D1 3547 E5 3562 C2 3581 D5 3596 B6 3611 C7 3626 E7 3644 B7 3669 A7 3696 A4 6509 E6 6526 B4 6608 C8 6637 B4 9100 C0 9116 D2 9131 B3 9147 E5 9164 D6 9179 D7 9195 C8 9210 C8
292 A5 1511 A5 2513 C1 2528 C0 2547 B5 2610 C9 2626 C9 2641 B8 2667 A7 2682 A6 3007 C5 3515 C1 3532 D2 3548 D6 3563 C5 3582 D5 3597 B4 3612 C7 3627 B8 3645 C7 3670 D9 3800 B6 6510 C6 6527 B5 6611 B8 6638 B4 9101 C0 9117 D2 9132 D3 9148 D4 9165 D6 9180 D7 9196 C8 9211 B8
1000 D8 1512 A5 2514 C1 2530 D0 2548 B5 2611 C9 2627 B7 2642 B9 2668 A7 2683 B5 3501 C3 3516 C2 3533 E2 3549 D6 3564 C6 3583 D5 3598 B5 3613 C9 3630 C8 3646 C9 3671 D8 3801 B7 6511 C6 6528 B5 6612 B7 6639 B3 9102 D1 9118 D2 9133 E4 9149 B9 9166 C6 9181 D7 9197 D8 9212 D8
1003 C6 2500 B0 2515 D3 2531 C1 2549 B4 2612 B6 2628 C9 2643 B7 2669 A8 2684 B5 3502 C3 3517 C4 3534 D2 3550 C6 3565 C6 3584 E5 3599 B6 3614 C7 3631 B8 3647 D7 3673 D8 3999 C2 6512 C6 6529 B6 6615 D8 6640 B6 9103 B1 9119 D2 9134 B3 9151 D5 9167 A6 9183 C7 9198 B8 9213 C9
1004 A9 2501 B3 2516 C2 2532 C5 2550 B5 2613 C7 2629 B8 2644 B7 2670 A8 2685 A7 3503 C2 3518 C0 3535 D2 3551 C6 3566 C6 3585 E5 3600 B4 3615 C9 3632 B7 3649 B8 3674 D8 5001 B2 6513 C6 6530 B6 6617 A9 6641 B4 9104 C1 9120 D2 9135 C4 9152 B5 9168 B6 9184 C7 9199 A8 9214 D9
1005 C5 2502 B3 2517 C2 2533 D5 2552 E5 2615 C7 2630 B9 2652 B7 2671 A8 2686 B7 3504 D3 3519 C0 3536 D2 3552 C6 3568 C6 3586 E4 3601 E9 3616 B7 3633 B9 3650 B7 3675 B3 5601 B9 6514 C6 6531 B6 6618 A8 6642 C5 9105 D1 9121 D2 9136 A5 9153 B5 9169 B6 9185 B7 9200 D8 9215 D9
1006 D0 2503 D3 2518 C2 2534 E6 2553 C5 2616 C7 2631 B8 2653 B9 2672 D9 2687 B3 3505 D3 3520 D1 3537 D1 3553 C6 3569 C6 3587 E4 3602 E7 3617 C9 3634 B7 3655 C7 3676 C4 5602 B7 6515 D4 6532 E6 6619 A9 6643 A5 9106 D1 9122 D2 9137 A4 9154 B5 9170 B6 9186 B7 9201 E8 9216 D9
1007 E3 2504 D3 2519 D2 2535 B9 2601 B9 2617 C7 2632 B9 2654 A7 2673 D9 2688 E5 3506 D3 3521 D0 3538 D0 3554 D6 3570 D6 3588 E4 3603 E7 3618 B7 3635 B9 3661 A9 6501 D3 6516 E4 6533 D6 6620 A8 6644 A6 9107 E1 9123 D2 9138 D4 9155 D5 9171 E6 9187 B7 9202 E8 9217 D9
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1011 C4 2508 D3 2523 E0 2542 D5 2605 E7 2621 B7 2636 C6 2658 B8 2677 A4 2692 B5 3510 C4 3525 D1 3542 C6 3558 C5 3577 E4 3592 D6 3607 E7 3622 B7 3639 D7 3665 A9 6505 E1 6522 E4 6603 E7 6633 A4 6648 E5 9112 C2 9127 E3 9142 B5 9160 E5 9175 D6 9191 D7 9206 D8 9221 C4
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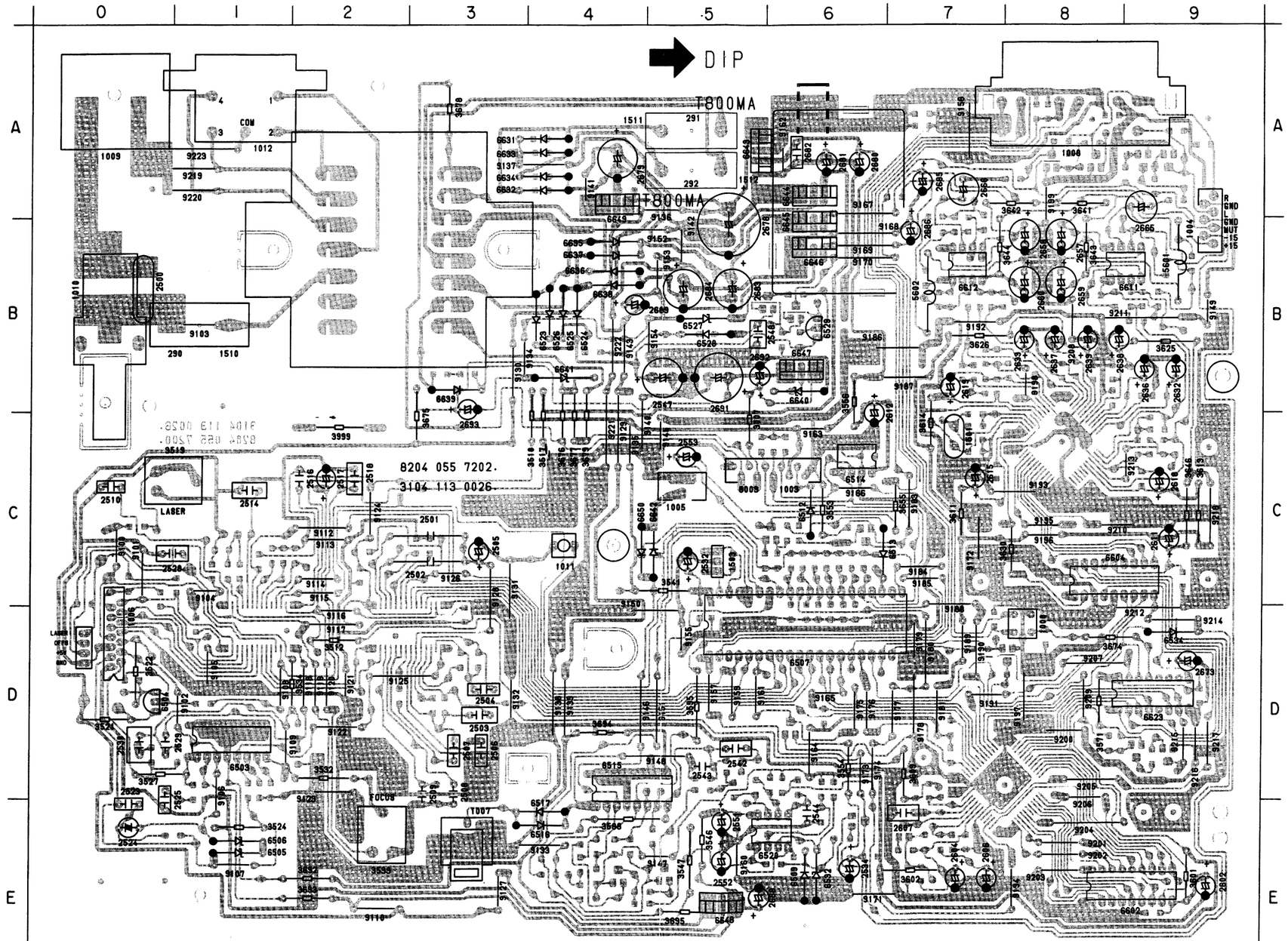
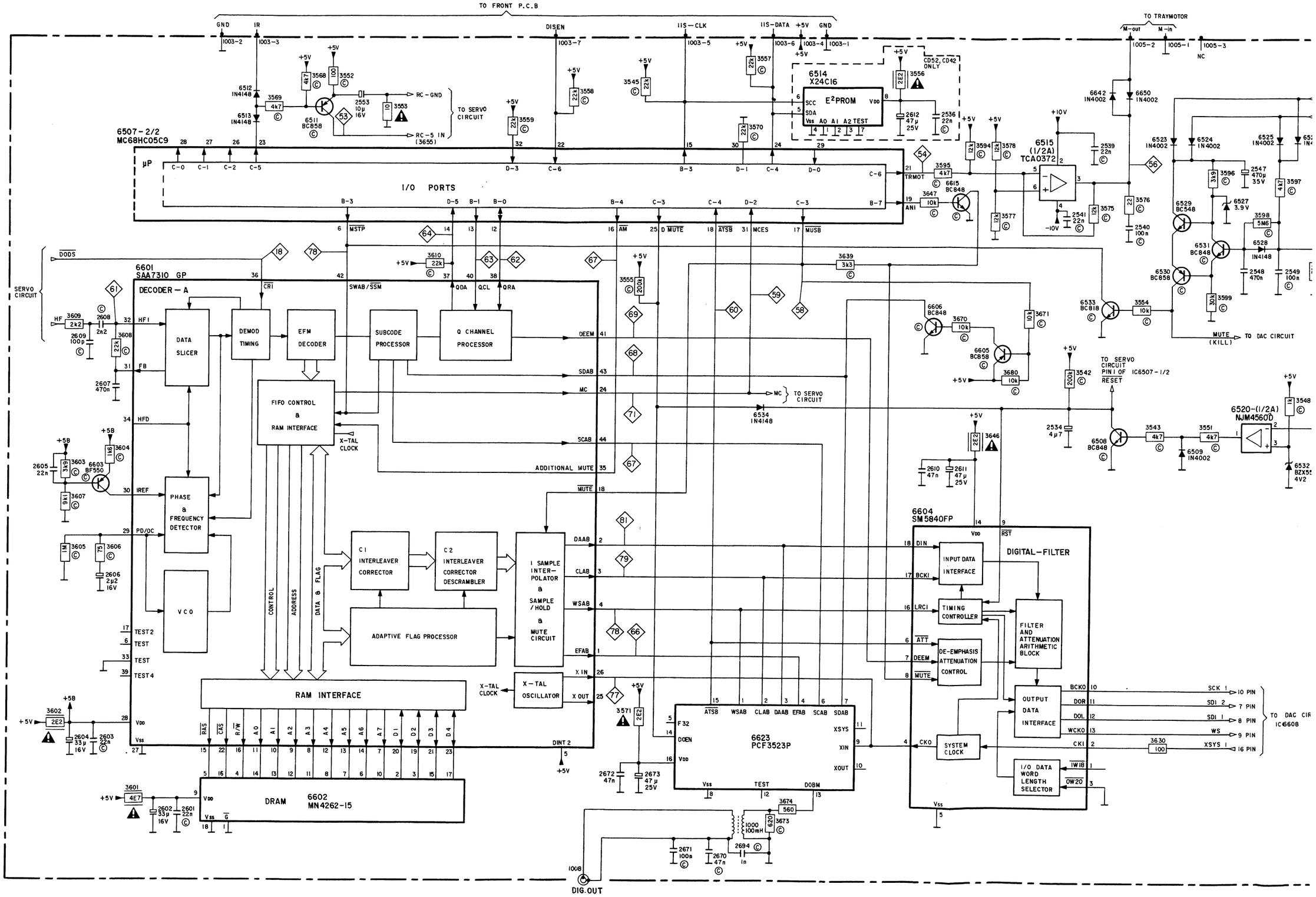
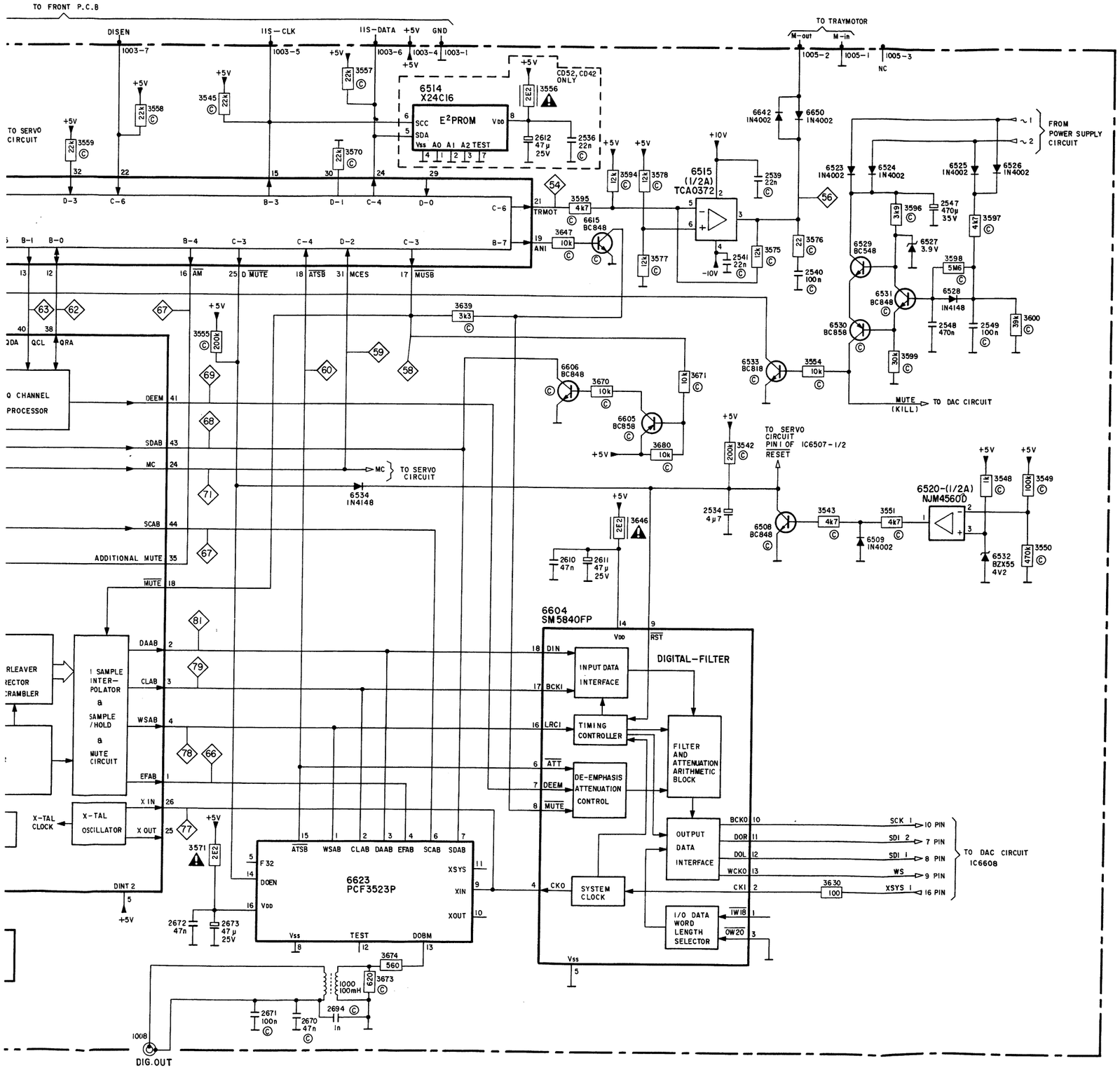
1501 C7 2510 C0 2525 E0 2544 E6 2607 E7 2623 B7 2638 B8 2660 B8 2679 A4 2694 D7 3512 D2 3527 D0 3545 C6 3560 C5 3579 E5 3594 E4 3609 D7 3624 B7 3642 A8 3667 A9 3694 D4 6507 D6 6524 B4 6605 D9 6635 B4 6650 C4 9114 C2 9129 C4 9145 C5 9162 A6 9177 D7 9193 C8 9208 B8 9223 A1



DECODER CIRCUIT DIAGRAM



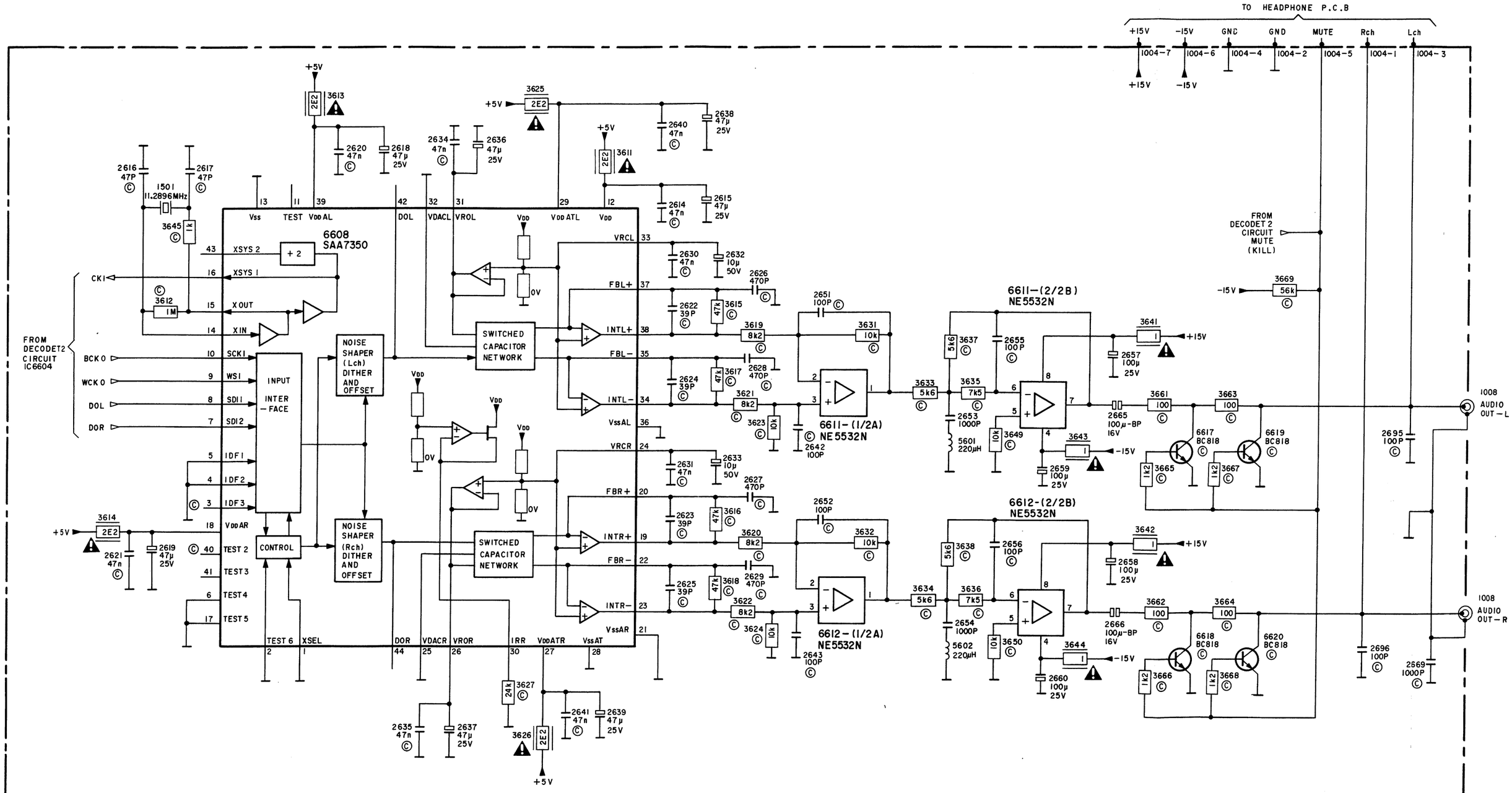


— 28 —

- 18 LOW PULSES DURING NEXT AND PREVIOUS
- 53 ACTIVITY WHEN USING AN IR REMOTE CONTROL
- 54 0V WHILE OPENING; 5V WHILE CLOSING; 2.5V IN REST
- 56 +5V WHILE TRAY IS OPENING; -5V WHILE TRAY IS CLOSING; 0V IN REST
- 61 0.5µs/DIV — EYEPATTERN — 2.5V — 1.3V
- 62 10ms/DIV — PLAY POSITION — ORA — ASYNCHRONOUS µP DEPENDENT
- 63 0.2ms/DIV — OCL — 10x8BITS
- 64 ODA — DATA
- 66 PULSES WHEN THE DISC IS SLOWLY BRAKED BY HAND
- 67 50µs/DIV — 136µs
- 68 ACTIVITY DURING PLAY
- 69 AUDIO SIGNALS DISC: HIGH ON TRACK 76 78 80 82 84 86 88; LOW ON TRACK 77 79 81 83 85 87 89
- 74 5µs/DIV — MC SIGNAL — 0V — 11µs
- STAND BY POSITION — 0V — BEGINNING PLAY POSITION — 0V — PLAY POSITION
- 77 11.2896 MHz SINEWAVE
- 78 5µs/DIV — PLAY POSITION — WSAB
- 79 — CLAB — 11.34µs
- 81 ACTIVITY DURING PLAY
- 82 11.2896 MHz SINEWAVE
- 91 4V — 1.1µs — 8V — 1.2s — POWER ON — POWER OFF

— 29 —

DAC CIRCUIT DIAGRAM



TO HEADPHONE P.C.B

+15V -15V GND GND MUTE Rch Lch

1004-7 1004-6 1004-4 1004-2 1004-5 1004-1 1004-3

+15V -15V

FROM DECODET 2 CIRCUIT MUTE (KILL)

-15V 3669 56k

6611-(2/2B) NE5532N

6611-(1/2A) NE5532N

6612-(2/2B) NE5532N

6612-(1/2A) NE5532N

2640 47n 2638 47µ 25V

2614 47n 2615 47µ 25V

2630 47n 2632 10µ 50V

2622 39P 47k 3615 2626 470P

3619 8k2 3631 10k 2651 100P

2624 39P 47k 3617 2628 470P

3621 8k2 3623 10k 2642 100P

2631 47n 2633 10µ 50V

2627 470P

2623 39P 47k 3616

3620 8k2 3632 10k 2652 100P

2625 39P 47k 3618 2629 470P

3622 8k2 3624 10k 2643 100P

3633 5k6 3635 7k5 2653 1000P 5601 220µH

3634 5k6 3636 7k5 2654 1000P 5602 220µH

5k6 3637 2655 100P 3641 1 +15V 2657 100µ 25V

5k6 3638 2656 100P 3642 1 +15V 2658 100µ 25V

10k 3649 3643 1 -15V 2659 100µ 25V

10k 3650 3644 1 -15V 2660 100µ 25V

2665 100µ-BP 16V

2666 100µ-BP 16V

3661 100 3663 100

3662 100 3664 100

1k2 3665 6617 BC818 1k2 3667 6619 BC818

1k2 3666 6618 BC818 1k2 3668 6620 BC818

1008 AUDIO OUT-L

1008 AUDIO OUT-R

2695 100P 2696 100P 2569 1000P

HEADPHONE CIRCUIT DIAGRAM

To MAIN P.C.B

+15

1012-7

LIN 1012-3

GND 1012-4

RIN 1012-1

GND 1012-2

MUTE 1012-5

1012-6

-15

To MAIN P.C.B

7651-2/2 NJM4560D

7651-1/2 NJM4560D

9041 9042

3691 10k

R 3691 CD-52 ONLY

3681 100 3682 100

3683 150 3684 150

3687 1k 3688 1k

1k 3689 1k 3690

3685 1k2 7653 BC338

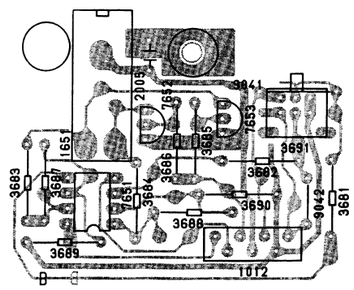
3686 1k2 7652 BC338

1651 LEFT

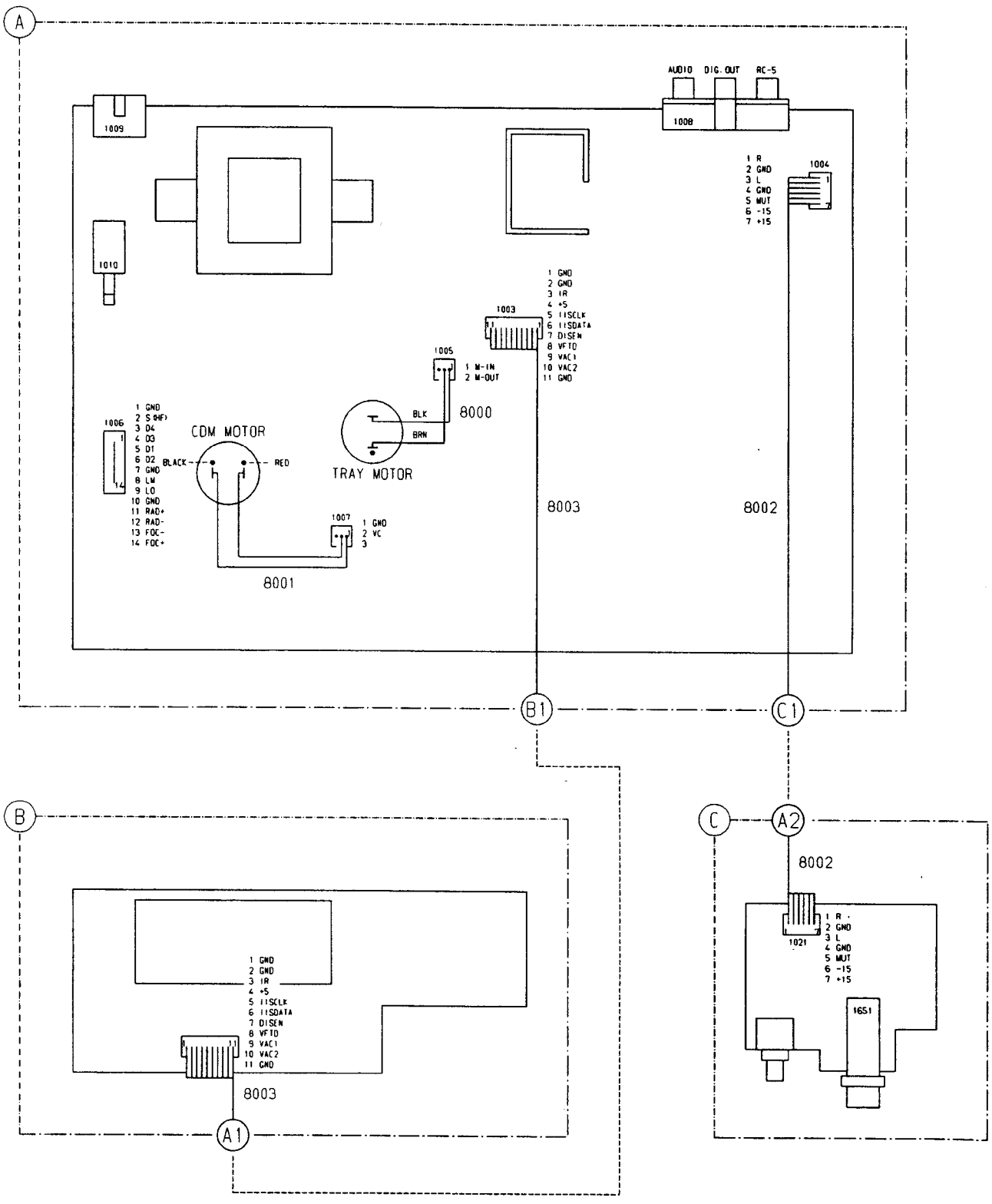
1651 GND

1651 RIGHT

HEAD PHONE



WIRING DIAGRAM



SERVO & DECODER PARTSLIST

2500	4822 126 10454	3.3nF 20% 400V
2501	4822 121 51321	8.2µF 1% 63V
2502	4822 121 51321	8.2µF 1% 63V
2503	5322 121 42661	330nF 5% 63V
2504	4822 121 43526	47nF 5% 100V
2505	4822 124 40272	33µF 20% 16V
2506	4822 121 42408	220nF 5% 63V
2507	4822 121 42408	220nF 5% 63V
2508	4822 121 43996	33nF 5% 50V
2509	4822 121 43996	33nF 5% 50V
2510	4822 121 43526	47nF 5% 100V
2511	4822 122 32863	22nF 80% 50V
2512	4822 122 31765	100pF 5% 50V
2513	4822 122 31746	1nF 5% 50V
2514	4822 121 42408	220nF 5% 63V
2515	4822 122 32863	22nF 80% 50V
2516	4822 121 43925	2.2nF 5% 50V
2517	4822 124 41596	22µF 20% 50V
2518	4822 121 51252	470nF 5% 63V
2519	4822 122 31746	1nF 5% 50V
2520	4822 122 31727	470pF 5% 63V
2521	4822 122 32442	10nF 10% 50V
2522	4822 122 31965	220pF 5% 63V
2523	5322 121 42386	100nF 5% 63V
2524	4822 124 41583	0.68µF 20% 50V Bipolar
2525	5322 121 42386	100nF 5% 63V
2526	4822 122 32542	47nF 10% 63V
2527	4822 122 32542	47nF 10% 63V
2528	4822 121 51252	470nF 5% 63V
2529	4822 121 43901	4.7nF 5% 50V
2530	5322 121 42661	330nF 5% 63V
2531	4822 122 32863	22nF 80% 50V
2532	4822 124 40433	47µF 20% 25V
2533	4822 122 32863	22nF 80% 50V
2534	4822 124 41577	4.7µF 20% 50V
2536	4822 122 32863	22nF 80% 50V for CD52, CD42
2539	4822 122 32863	22nF 80% 50V
2540	4822 122 33496	100nF 10% 63V
2541	4822 122 32863	22nF 80% 50V
2542	4822 121 51252	470nF 5% 63V
2543	4822 121 43925	2.2nF 5% 50V
2544	4822 121 43179	18nF 5% 250V
2545	4822 122 32863	22nF 80% 50V
2546	4822 122 32863	22nF 80% 50V
2547	4822 124 41334	470µF 20% 35V
2548	4822 121 51252	470nF 5% 63V
2549	4822 122 33496	100nF 10% 63V
2551	4822 124 40433	47µF 20% 25V
2552	4822 124 40433	47µF 20% 25V
2553	4822 124 40435	10µF 20% 50V
2601	4822 122 32863	22nF 80% 50V
2602	4822 124 40272	33µF 20% 16V
2603	4822 122 32863	22nF 80% 50V
2604	4822 124 40272	33µF 20% 16V
2605	4822 122 32863	22nF 80% 50V
2606	4822 124 41576	2.2µF 20% 50V
2607	4822 121 51252	470nF 5% 63V
2608	4822 122 31644	2.2nF 10% 63V
2609	4822 122 31765	100pF 5% 50V
2610	4822 122 32542	47nF 10% 63V
2611	4822 124 40433	47µF 20% 25V
2612	4822 124 40433	47µF 20% 25V for CD42, CD52
2614	4822 122 32542	47nF 10% 63V
2615	4822 124 40433	47µF 20% 25V
2616	4822 122 31772	47pF 5% 50V
2617	4822 122 31772	47pF 5% 50V
2618	4822 124 40433	47µF 20% 25V
2619	4822 124 40433	47µF 20% 25V
2620	4822 122 32542	47nF 10% 63V
2621	4822 122 32542	47nF 10% 63V
2622	4822 122 31972	39pF 5% 50V
2623	4822 122 31972	39pF 5% 50V
2624	4822 122 31972	39pF 5% 50V
2625	4822 122 31972	39pF 5% 50V
2626	4822 122 31727	470pF 5% 63V
2627	4822 122 31727	470pF 5% 63V
2628	4822 122 31727	470pF 5% 63V
2629	4822 122 31727	470pF 5% 63V
2630	4822 122 32542	47nF 10% 63V
2631	4822 122 32542	47nF 10% 63V
2632	4822 124 40435	10µF 20% 50V
2633	4822 124 40435	10µF 20% 50V
2634	4822 122 32542	47nF 10% 63V
2635	4822 122 32542	47nF 10% 63V
2636	4822 124 40433	47µF 20% 25V
2637	4822 124 40433	47µF 20% 25V
2638	4822 124 40433	47µF 20% 25V
2639	4822 124 40433	47µF 20% 25V
2640	4822 122 32542	47nF 10% 63V
2641	4822 122 32542	47nF 10% 63V
2642	4822 122 31765	100pF 5% 50V
2643	4822 122 31765	100pF 5% 50V
2651	4822 122 31765	100pF 5% 50V
2652	4822 122 31765	100pF 5% 50V
2653	4822 122 31746	1000pF 5% 63V
2654	4822 122 31746	1000pF 5% 63V
2655	4822 122 31765	100pF 5% 50V
2656	4822 122 31765	100pF 5% 50V
2657	4822 124 41525	100µF 20% 25V
2658	4822 124 41525	100µF 20% 25V
2659	4822 124 41525	100µF 20% 25V
2660	4822 124 41525	100µF 20% 25V
2665	4822 124 22339	100µF 20% 16V Bipolar
2666	4822 124 22339	100µF 20% 16V Bipolar
2667	4822 122 32542	47nF 10% 63V
2668	4822 122 33496	100nF 10% 63V
2669	4822 122 31746	1nF 5% 50V
2670	4822 122 32542	47nF 10% 63V

2671	4822 122 33496	100nF 10% 63V
2672	4822 122 32542	47nF 10% 63V
2673	4822 124 40433	47µF 20% 25V
2674	4822 122 32863	22nF 80% 50V
2675	4822 122 32863	22nF 80% 50V
2676	4822 122 32863	22nF 80% 50V
2677	4822 122 32863	22nF 80% 50V
2678	4822 124 23268	3300µF 20% 16V
2679	4822 124 41853	1000µF 20% 16V
2680	4822 124 40433	47µF 20% 25V
2681	4822 124 40433	47µF 20% 25V
2682	5322 121 42386	100nF 5% 63V
2683	5322 124 21189	100µF 20% 40V
2684	5322 124 21189	100µF 20% 40V
2685	4822 124 40433	47µF 20% 25V
2686	4822 124 40433	47µF 20% 25V
2687	4822 122 32863	22nF 80% 50V
2688	4822 124 40433	47µF 20% 25V
2689	4822 124 40433	47µF 20% 25V
2690	4822 122 32863	22nF 80% 50V
2691	4822 124 23172	470µF 20% 50V
2692	4822 124 41596	22µF 20% 50V
2693	4822 124 40433	47µF 20% 25V
2694	4822 122 31746	1nF 5% 50V
2695	4822 122 31765	100pF 5% 50V
2696	4822 122 31765	100pF 5% 50V

3007	4822 052 10478	4.7Ω 5% 0.33W Safety
3501	4822 051 10153	15kΩ 2% 0.25W
3502	4822 051 10473	47kΩ 2% 0.25W
3503	4822 051 10223	22kΩ 2% 0.25W
3504	4822 051 10224	220kΩ 2% 0.25W
3505	4822 051 10512	5.1kΩ 2% 0.25W
3506	4822 051 10224	220kΩ 2% 0.25W
3507	4822 051 20183	18kΩ 5% 0.1W
3508	4822 051 10182	1.8kΩ 2% 0.25W
3509	4822 051 10123	12kΩ 2% 0.25W
3511	4822 051 10102	1kΩ 2% 0.25W
3512	4822 051 10101	100Ω 2% 0.25W
3513	4822 051 10103	10kΩ 2% 0.25W
3514	4822 051 10123	12kΩ 2% 0.25W
3515	4822 051 10243	24kΩ 2% 0.25W
3516	4822 051 10562	5.6kΩ 2% 0.25W
3518	4822 051 10221	220Ω 2% 0.25W
3519	4822 101 10685	4.7kΩ 20% 0.05W
3520	4822 051 10101	100Ω 2% 0.25W
3521	4822 052 10189	18Ω 5% 0.33W Safety
3522	4822 052 10129	12Ω 5% 0.33W Safety
3523	4822 051 10339	33Ω 2% 0.25W
3524	4822 052 10478	4.7Ω 5% 0.33W Safety
3525	4822 051 10682	6.8kΩ 2% 0.25W
3526	4822 051 10229	22Ω 2% 0.25W
3527	4822 052 10279	27Ω 5% 0.33W Safety
3530	4822 051 10682	6.8kΩ 2% 0.25W
3531	4822 051 10823	82kΩ 2% 0.25W

3532	4822 050 26804	680kΩ 1% 0.6W
3533	4822 100 11193	22kΩ 20% Potmtr. Lin.
3534	4822 050 21204	120kΩ 1% 0.6W
3535	4822 051 10154	150kΩ 2% 0.25W
3536	4822 111 91494	11kΩ 2% 0.1W
3537	4822 111 91495	160kΩ 2% 0.1W
3538	4822 051 10563	56kΩ 2% 0.25W
3539	4822 051 10472	4.7kΩ 2% 0.25W
3540	4822 051 10104	100kΩ 2% 0.25W
3541	4822 052 10228	2.2Ω 5% 0.33W Safety
3542	4822 051 10204	200kΩ 2% 0.25W
3543	4822 051 10472	4.7kΩ 2% 0.25W
3545	4822 051 10223	22kΩ 2% 0.25W
3546	4822 052 10228	2.2Ω 5% 0.33W Safety
3547	4822 052 10228	2.2Ω 5% 0.33W Safety
3548	4822 051 10102	1kΩ 2% 0.25W
3549	4822 051 10104	100kΩ 2% 0.25W
3550	4822 051 10474	470kΩ 2% 0.25W
3551	4822 051 10472	4.7kΩ 2% 0.25W
3552	4822 051 10101	100Ω 2% 0.25W
3553	4822 052 10109	10Ω 5% 0.33W Safety
3554	4822 050 21003	10kΩ 1% 0.6W
3555	4822 051 10204	200kΩ 2% 0.25W
3556	4822 052 10228	2.2Ω 5% 0.33W Safety for CD42, CD52
3557	4822 051 10223	22kΩ 2% 0.25W
3558	4822 051 10223	22kΩ 2% 0.25W
3559	4822 051 10223	22kΩ 2% 0.25W
3560	4822 051 10223	22kΩ 2% 0.25W
3561	4822 051 10223	22kΩ 2% 0.25W
3562	4822 051 10223	22kΩ 2% 0.25W
3563	4822 051 10224	220kΩ 2% 0.25W
3564	4822 051 10472	4.7kΩ 2% 0.25W
3565	4822 051 20222	2.2kΩ 5% 0.1W
3566	4822 051 10103	10kΩ 2% 0.25W
3568	4822 051 10472	4.7kΩ 2% 0.25W
3569	4822 051 10472	4.7kΩ 2% 0.25W
3570	4822 051 10223	22kΩ 2% 0.25W
3571	4822 052 10228	2.2Ω 5% 0.33W Safety
3575	4822 051 10123	12kΩ 2% 0.25W
3576	4822 051 10229	22Ω 2% 0.25W
3577	4822 051 10123	12kΩ 2% 0.25W
3578	4822 051 10123	12kΩ 2% 0.25W
3579	4822 051 10823	82kΩ 2% 0.25W
3580	4822 051 10154	150kΩ 2% 0.25W
3581	4822 051 10204	200kΩ 2% 0.25W
3582	4822 051 10562	5.6kΩ 2% 0.25W
3583	4822 051 10122	1.2kΩ 2% 0.25W
3584	4822 051 10472	4.7kΩ 2% 0.25W
3585	4822 051 10472	4.7kΩ 2% 0.25W
3586	4822 051 10333	33kΩ 2% 0.25W
3587	4822 051 10562	5.6kΩ 2% 0.25W
3588	4822 050 26804	680kΩ 1% 0.6W
3589	4822 051 10332	3.3kΩ 2% 0.25W
3590	4822 051 10913	91kΩ 2% 0.25W
3591	4822 051 10104	100kΩ 2% 0.25W

3592	4822 051 10473	47kΩ 2% 0.25W
3593	4822 051 10472	4.7kΩ 2% 0.25W
3594	4822 050 10123	12kΩ 1% 0.125W
3595	4822 050 24702	4.7kΩ 1% 0.6W
3596	4822 051 10392	3.9kΩ 2% 0.25W
3597	4822 051 10472	4.7kΩ 2% 0.25W
3598	4822 051 10565	5.6MΩ 5% 0.25W
3599	4822 051 10303	30kΩ 2% 0.25W
3600	4822 051 10393	39kΩ 2% 0.25W
3601	4822 052 10228	4.7Ω 5% 0.33W Safety
3602	4822 052 10228	2.2Ω 5% 0.33W Safety
3603	4822 051 10392	3.9kΩ 2% 0.25W
3604	4822 051 10162	1.6kΩ 2% 0.25W
3605	4822 051 10105	1MΩ 5% 0.25W
3606	4822 051 10759	75Ω 2% 0.25W
3607	4822 051 10912	9.1kΩ 2% 0.25W
3608	4822 051 10223	22kΩ 2% 0.25W
3609	4822 050 22202	2.2kΩ 1% 0.6W
3610	4822 051 10223	22kΩ 2% 0.25W
3611	4822 052 10228	2.2Ω 5% 0.33W Safety
3612	4822 051 10105	1MΩ 5% 0.25W
3613	4822 052 10228	2.2Ω 5% 0.33W Safety
3614	4822 052 10228	2.2Ω 5% 0.33W Safety
3615	4822 051 10473	47kΩ 2% 0.25W
3616	4822 051 10473	47kΩ 2% 0.25W
3617	4822 051 10473	47kΩ 2% 0.25W
3618	4822 051 10473	47kΩ 2% 0.25W
3619	4822 051 10822	8.2kΩ 2% 0.25W
3620	4822 051 10822	8.2kΩ 2% 0.25W
3621	4822 051 10822	8.2kΩ 2% 0.25W
3622	4822 051 10822	8.2kΩ 2% 0.25W
3623	4822 051 10103	10kΩ 2% 0.25W
3624	4822 051 10103	10kΩ 2% 0.25W
3625	4822 052 10228	2.2Ω 5% 0.33W Safety
3626	4822 052 10228	2.2Ω 5% 0.33W Safety
3627	4822 051 10243	24kΩ 2% 0.25W
3630	4822 051 10101	100Ω 2% 0.25W
3631	4822 051 10103	10kΩ 2% 0.25W
3632	4822 051 10103	10kΩ 2% 0.25W
3633	4822 051 10562	5.6kΩ 2% 0.25W
3634	4822 051 10562	5.6kΩ 2% 0.25W
3635	4822 051 10752	7.5kΩ 2% 0.25W
3636	4822 051 10752	7.5kΩ 2% 0.25W
3637	4822 051 10562	5.6kΩ 2% 0.25W
3638	4822 051 10562	5.6kΩ 2% 0.25W
3639	4822 051 10332	3.3kΩ 2% 0.25W
3641	4822 052 10108	1Ω 5% 0.33W Safety
3642	4822 052 10108	1Ω 5% 0.33W Safety
3643	4822 052 10108	1Ω 5% 0.33W Safety
3644	4822 052 10108	1Ω 5% 0.33W Safety
3645	4822 051 10102	1kΩ 2% 0.25W
3646	4822 052 10228	2.2Ω 5% 0.33W Safety
3647	4822 051 10103	10kΩ 2% 0.25W
3649	4822 051 10103	10kΩ 2% 0.25W
3650	4822 051 10103	10kΩ 2% 0.25W

3655	4822 050 21002	1kΩ 1% 0.6W
3661	4822 051 10101	100Ω 2% 0.25W
3662	4822 051 10101	100Ω 2% 0.25W
3663	4822 051 10101	100Ω 2% 0.25W
3664	4822 051 10101	100Ω 2% 0.25W
3665	4822 051 10122	1.2kΩ 2% 0.25W
3666	4822 051 10122	1.2kΩ 2% 0.25W
3667	4822 051 10122	1.2kΩ 2% 0.25W
3668	4822 051 10122	1.2kΩ 2% 0.25W
3669	4822 051 10563	56kΩ 2% 0.25W
3670	4822 051 10103	10kΩ 2% 0.25W
3671	4822 051 10103	10kΩ 2% 0.25W
3673	4822 051 10621	620Ω 2% 0.25W
3674	4822 051 10561	560Ω 2% 0.25W
3675	4822 050 27501	750Ω 1% 0.6W
3676	4822 050 10479	47Ω 5% 0.33W Safety
3677	4822 052 10479	47Ω 5% 0.33W Safety
3678	4822 052 10108	1Ω 5% 0.33W Safety
3679	4822 052 10108	1Ω 5% 0.33W Safety
3680	4822 051 10103	10kΩ 2% 0.25W
3800	4822 051 10008	0Ω 5% 0.25W
3801	4822 051 10008	0Ω 5% 0.25W

5601	4822 157 51192	220µH
5602	4822 157 51192	220µH

6501	4822 209 73235	TDA8809T/C2
6502	4822 209 73234	TDA8808T/C3
6503	4822 209 72587	TCA0372DP2
6504	4822 130 44121	BC338
6505	4822 130 30861	BZX79-C7V5
6506	4822 130 30861	BZX79-C7V5
6507	4822 209 62667	MC68HC05D9P/ZC400005
6508	4822 130 61207	BC848
6509	5322 130 30684	1N4002
6510	4822 130 61207	BC848
6511	5322 130 42012	BC858A
6512	4822 130 30621	1N4148 for CD42, CD52
6513	4822 130 30621	1N4148
6514	4822 209 60772	X24C16 for CD42, CD52
6515	4822 209 72587	TCA0372DP2
6516	5322 130 30684	1N4002
6517	5322 130 30684	1N4002
6520	4822 209 83274	NJM4560D
6521	5322 130 42012	BC858A
6522	5322 130 42012	BC858A
6523	5322 130 30684	1N4002
6524	5322 130 30684	1N4002
6525	5322 130 30684	1N4002
6526	5322 130 30684	1N4002
6527	4822 130 31981	BZX79-C3V9
6528	4822 130 30621	1N4148
6529	4822 130 40938	BC548

6530	5322 130 42012	BC858A
6531	4822 130 61207	BC848
6532	4822 130 31554	BZX79-C4V3
6533	4822 130 42675	BC818
6534	4822 130 30621	1N4148
6601	4822 209 61759	SAA7310GP/H5
6602	4822 209 70422	MN4264-15
6603	4822 130 42131	BF550
6604	4822 209 30264	SM5840FP
6605	5322 130 42012	BC858A
6606	4822 130 61207	BC848
6608	4822 701 11933	SAA7350
6611	5322 209 86234	NE5532N
6612	5322 209 86234	NE5532N
6615	4822 130 61207	BC848
6617	4822 130 42675	BC818
6618	4822 130 42675	BC818
6619	4822 130 42675	BC818
6620	4822 130 42675	BC818
6623	4822 209 62588	PCF3523P
6631	5322 130 30684	1N4002
6632	5322 130 30684	1N4002
6633	5322 130 30684	1N4002
6634	5322 130 30684	1N4002
6635	5322 130 30684	1N4002
6636	5322 130 30684	1N4002
6637	5322 130 30684	1N4002
6638	5322 130 30684	1N4002
6639	5322 130 30684	1N4002
6640	4822 130 34195	BZX79-C13

6641	4822 130 31456	BZV85-C5V1
6642	5322 130 30684	1N4002
6643	4822 209 71579	TY40408
6644	5322 209 11222	MC7905CT
6645	4822 209 80808	MC7815CT
6646	5322 130 41899	MC7915CT
6647	4822 209 80808	MC7815CT
6650	5322 130 30684	1N4002

Miscellaneous

0281	4822 492 63076	Spring, clamping
0291	4822 256 30274	Holder, Fuse
0292	4822 256 30274	Holder, Fuse
1000	4822 148 80281	Transformer for Dig. Out
1003	4822 265 40722	Socket 11P
1004	4822 267 50621	Socket 7P
1005	4822 264 40207	Connector 3P
1006	4822 267 50676	Connector 14P
1007	4822 265 30913	Connector 3P
1008	4822 267 31384	Socket for CD42, CD32
1008	4822 267 31397	Socket for CD52
1009	4822 267 31383	Inlet
1010	4822 276 11309	Mains Switch
1011	4822 276 13106	Tact Switch
1501	4822 242 71349	11,2896MHz Crystal
1503	4822 242 72527	4MHz Resonator
1511	4822 070 38001	Fuse 800mA
1512	4822 070 38001	Fuse 800mA
5001	4822 146 31004	Mains Transformer

HEADPHONE PANEL PARTSLIST

2005	4822 121 43925	2.2nF 5% 50V
3681	4822 050 10101	100Ω 2% 0.25W
3682	4822 050 10101	100Ω 2% 0.25W
3683	4822 050 21501	150Ω 1% 0.6W
3684	4822 050 21501	150Ω 1% 0.6W
3685	4822 050 10122	1.2kΩ 2% 0.25W
3686	4822 050 10122	1.2kΩ 2% 0.25W
3687	4822 050 21002	1kΩ 1% 0.6W
3688	4822 050 21002	1kΩ 1% 0.6W
3689	4822 050 21002	1kΩ 1% 0.6W
3690	4822 050 21002	1kΩ 1% 0.6W
3691	4822 102 10433	10kΩ Potm. Twin for CD52

7651	4822 209 83274	NJM4560D
7652	4822 130 44121	BC338
7653	4822 130 44121	BC338

Miscellaneous

1012	4822 267 50621	Socket 7P
1651	4822 267 31065	Headphone Socket

CONTROL & DISPLAY PANEL PARTSLIST

2001	4822 124 41596	22µF 20% 50V
2002	4822 121 43867	22nF 5% 50V
2003	4822 122 10172	220pF 10% 50V
2004	4822 124 41596	22µF 20% 50V for CD52, CD42

3001	4822 050 24702	4.7kΩ 1% 0.6W
3002	4822 050 21504	150kΩ 1% 0.6W
3003	4822 050 24702	4.7kΩ 1% 0.6W
3004	4822 050 21002	1kΩ 1% 0.6W
3005	4822 050 21002	1kΩ 1% 0.6W
3006	4822 050 24703	47kΩ 1% 0.6W
3008	4822 050 24702	4.7kΩ 1% 0.6W
3009	4822 050 22203	22kΩ 1% 0.6W
3010	4822 050 22203	22kΩ 1% 0.6W
3011	4822 050 22203	22kΩ 1% 0.6W
3012	4822 050 24703	47kΩ 1% 0.6W for CD52, CD42

6001	4822 130 34281	BZX79-C15
6002	4822 130 30621	1N4148
6003	4822 130 30621	1N4148
6004	4822 130 30621	1N4148 for CD52, CD42
6005	4822 130 30621	1N4148
6006	4822 130 30621	1N4148 for CD52, CD42
6007	4822 130 30621	1N4148
6008	4822 130 34233	BZX79-B5V1
6009	4822 130 34233	BZX79-B5V1
7001	4822 130 40938	BC548
7002	4822 209 72226	U3090

Miscellaneous

0250	4822 156 91796	Holder
1013	4822 265 40722	Socket 11P
1020	4822 276 13114	Tact Switch for CD52
1021	4822 276 13114	Tact Switch for CD52
1023	4822 276 13114	Tact Switch for CD52, CD42
1025	4822 276 13114	Tact Switch for CD52
1026	4822 276 13114	Tact Switch for CD52, CD42
1027	4822 276 13114	Tact Switch
1028	4822 276 13114	Tact Switch for CD52
1029	4822 276 13114	Tact Switch for CD52
1030	4822 276 13114	Tact Switch for CD52
1031	4822 276 13114	Tact Switch for CD52
1032	4822 276 13114	Tact Switch for CD52
1033	4822 276 13114	Tact Switch for CD52
1034	4822 276 13114	Tact Switch for CD52
1035	4822 276 13114	Tact Switch for CD52
1036	4822 276 13114	Tact Switch
1037	4822 276 13114	Tact Switch
1038	4822 276 13114	Tact Switch
1039	4822 276 13114	Tact Switch
1040	4822 276 13114	Tact Switch
1044	4822 276 13114	Tact Switch
1045	4822 276 13114	Tact Switch
1046	4822 276 13114	Tact Switch for CD52
1047	4822 276 13114	Tact Switch for CD52
1048	4822 276 13114	Tact Switch for CD52
1049	4822 276 13114	Tact Switch for CD52
1050	4822 276 13114	Tact Switch for CD52
1051	4822 276 13114	Tact Switch for CD52
1052	4822 276 13114	Tact Switch for CD52
1060	4822 214 51772	IR Receiver GP1U521X for CD52, CD42
1061	4822 130 90661	Display 6-MT-147GK